Report of Results –
Evaluation of Potential Vapor Intrusion

Intersil/Siemens Site
Indoor Air Study Area
Cupertino, California

Prepared for:

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December 2013

Project No. OD11161051

December 20, 2013

Project OD11161501

Mr. Roger Papler
Engineering Geologist
California Regional Water Quality Control Board
San Francisco Bay Region
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Oakland, California 94612

Subject: **Report of Results—Evaluation of Potential Vapor Intrusion**
Intersil/Siemens Site, Indoor Air Study Area
Cupertino, California

Dear Mr. Papler:

AMEC Environment & Infrastructure, Inc. (AMEC) is pleased to submit this *Report of Results—Evaluation of Potential Vapor Intrusion* for the Intersil/Siemens Site, Indoor Air Study Area located in Cupertino, California.

If you have any questions, please contact either of the undersigned.

Sincerely yours,
AMEC Environment & Infrastructure, Inc.

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Enclosure

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REPORT OF RESULTS—EVALUATION OF POTENTIAL VAPOR INTRUSION
Intersil/Siemens Site
Indoor Air Study Area
Cupertino, California

December 20, 2013
Project OD11160151

This report was prepared by the staff of AMEC Environment & Infrastructure, Inc., under the supervision of the Geologist whose seal and signature appear hereon.

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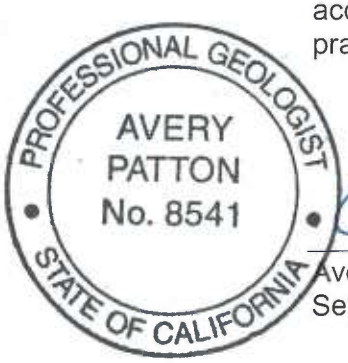

Avery Patton, PG #8541
Senior Geologist

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1.0 INTRODUCTION

On behalf of the General Electric Company (GE) and SMI Holding, LLC (SMI), AMEC Environment & Infrastructure, Inc. (AMEC) prepared this *Report of Results—Evaluation of Potential Vapor Intrusion* (Report) for the Indoor Air Study Area, which is in the Off-Site Study Area of the Intersil/Siemens Superfund Site in Cupertino, California (the Site, Figure 1). The California Regional Water Quality Control Board, San Francisco Bay Region (Water Board) and the United States Environmental Protection Agency (EPA) requested the collection of indoor, crawl space, and outdoor air samples to evaluate whether volatile organic compounds (VOCs) in groundwater, in particular trichloroethene (TCE), are potentially impacting indoor air quality at 17 residences located north and hydraulically downgradient of the Site and at a commercial building located east of the Site (Figure 2).

The sampling program was conducted in general accordance with the methods described in the *Work Plan to Evaluate Potential Vapor Intrusion, Intersil/Siemens Site, Indoor Air Study Area* (Work Plan) (AMEC, 2012a), which was approved by the Water Board in a letter dated May 3, 2012 (Water Board, 2012a). The scope of work described in the Work Plan included the evaluation of the 17 residential properties, but, as noted herein, only 7 of the 17 residents elected to participate in the indoor air evaluation. In addition, and at the request of the Water Board and EPA, the sampling program included the scopes of work described in the following documents:

- *Revised Addendum to Work Plan to Evaluate Potential Vapor Intrusion, Former AMI Building 700/800* (Addendum) (AMEC, 2012b), dated August 20, 2013, which included the former American Microsystems, Inc. (AMI) Building 700/800 located at 18880 Homestead Road in Cupertino, California (Figure 2) in the scope of work for the vapor intrusion assessment. The Addendum was approved by the Water Board in a letter dated October 23, 2012 (Water Board, 2012b).
- *Proposed Sample Locations and Additional Details, Former AMI Building 700/800* (AMEC, 2012c), dated November 27, 2012, described the results of the site walk at the former AMI building and presented proposed sample locations. The proposal was approved by the Water Board via email on December 3, 2012.

A description of pertinent background information, methods and procedures for the sampling program, analytical results, discussion, and conclusions are presented below.

2.0 BACKGROUND

Groundwater investigations in the Off-Site Study Area began in 1986. The shallowest groundwater zone in the Off-Site Study Area has been divided into four depth intervals. The following table presents the approximate depths for the A1, A2, A3, and A4 depth intervals along the northern edge of Homestead Road and at Lorne Way (Pristine Earth, Inc. [PEI] and ARCADIS, Inc. [ARCADIS], 2011):

Depth Interval	Northern Edge of Homestead Road (feet bgs)	Lorne Way (feet bgs)
A1	39'-55'	37'-56'
A2	56'-66'	57'-69'
A3	67'-82'	70'-82'
A4	85'-119.5'	85'-120'

bgs – below ground surface

A detailed description of the history of remedial activities can be found in the Five Year Status Reports (Geomatrix and LFR Levine-Fricke, 1995, 2000, and 2005; AMEC and LFR, 2009). Currently, there are three groundwater monitoring wells screened in the A4 depth interval north of Homestead Road (QH-1A, S1A, and LS-1A). The primary constituent detected in groundwater at the Site is TCE. TCE has not been detected in wells QH-1A and LS-1A since the early to mid-1990s; the TCE concentration in well S-1A was 49 micrograms per liter (µg/L) in 2011 and 36 µg/L in 2012 (AMEC and ARCADIS, 2012 and 2013). Groundwater extraction from the B zone in the Off-Site Study Area began in 1990 from wells LQ-2B and LR-1B, and extraction well LQ-1B was added in 1991 as part of the final remedy. Currently, groundwater is extracted from wells LQ-2B and LR-1B. Groundwater extracted from the B zone in the Off-Site Study Area is pumped to the former Siemens facility for treatment.

In 2011, a groundwater investigation was performed in the Off-Site Study Area that included a membrane interface probe (MIP) investigation, grab groundwater sampling, and soil gas sampling (PEI and ARCADIS, 2011). Concentrations of TCE and cis-1,2-dichloroethene (cis-1,2-DCE) reported in grab groundwater samples collected from the A1 depth interval within the Off-Site Study Area are shown on Figure 2; concentrations of TCE exceeded 50 µg/L in four locations (PEI and ARCADIS, 2011). Several other VOCs were also detected in groundwater, but at much lower concentrations, as noted in the Off-Site Study Area Investigation Report (PEI and ARCADIS, 2011).

In the same study, soil gas samples were collected from 10 feet bgs at four locations along Homestead Road (MIP-OS-1 through -4) where elevated concentrations of VOCs were reported in the grab groundwater samples collected from the A1 depth interval (PEI and ARCADIS, 2011). The following table presents concentrations of TCE and cis-1,2-DCE, in

units of microgram per cubic meter (µg/m^3), reported in these four soil gas samples (PEI and ARCADIS, 2011):

Sample ID	Depth (feet bgs)	TCE (µg/m^3)	cis-1,2-DCE (µg/m^3)
MIP-OS-1-SG-10	10	<26	<20
MIP-OS-2-SG-10	10	37	<21
MIP-OS-3-SG-10	10	140	4.1
MIP-OS-4-SG-10	10	<30	<22
Residential Soil Gas ESL[1]		**300**	**31,000[2]**

TCE, cis-1,2-DCE, and the other VOCs detected were below their respective shallow soil gas Environmental Screening Levels (ESLs) for the protection of indoor air in residential areas (Water Board, 2013a).

As discussed in Section 5.4, the sampling conducted during this evaluation of vapor intrusion reported detectable concentrations of TCE, chloroform, toluene, PCE, and 1,1,1-TCA. Of these, TCE in groundwater in the Off-Site Study Area is discussed above and chloroform has never been detected in groundwater at this Site. The occurrence of the remaining constituents in groundwater in the Off-Site Study Area is described below:

- Toluene has not been analyzed in the Off-Site Study Area monitoring wells screened in the A4 depth interval since the early 1990s because it was not detected or was detected at very low concentrations prior to that time, and it was never detected in groundwater samples collected from the A1 through A3 depth intervals during the 2011 investigation (PEI and ARCADIS, 2011).
- PCE has generally not been detected in the Off-Site Study Area monitoring wells (which are screened in the A4 depth interval), and it was only detected in 1 (at 3.6 µg/L) of 13 grab groundwater samples collected from the shallowest groundwater interval (A1 depth interval) during the 2011 investigation (PEI and ARCADIS, 2011). The concentration in the A1 depth interval (3.6 µg/L) is well below the residential ESL for the protection of indoor air of 63 µg/L for a fine/coarse soil particle size mix. The subsurface consists of interbedded sand, silts, and clays (PEI and ARCADIS, 2011); therefore, the residential ESL of 63 µg/L for a fine/coarse mix is applicable for this site.
- 1,1,1-TCA has been detected in one of the four Off-Site Study Area monitoring wells, which are screened in the A4 depth interval, at a concentration of 3.9 µg/L in 2012 (AMEC and ARCADIS, 2013). 1,1,1-TCA was detected in 5 of 13 grab groundwater samples collected from the shallowest groundwater interval (A1 depth interval) during the 2011 investigation, at a maximum concentration of 5.3 µg/L (PEI and ARCADIS, 2011). The highest concentration in the A1 depth interval is well below the residential ESL for the protection of indoor air of 720,000 µg/L for a fine/coarse mix.

[1] Environmental Screening Level (ESL), Shallow Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion, Table E-2 (Water Board, 2013).
[2] No ESL is available for cis-1,2-DCE; the ESL for trans-1,2-DCE is presented as a surrogate.

3.0 INDOOR AIR STUDY AREA

The Indoor Air Study Area includes 17 residences located between Homestead Road and Lorne Way, as well as the former AMI building (Figures 1 and 2). The Indoor Air Study Area was identified based on the locations of grab groundwater samples collected along Homestead Road from the A1 groundwater depth interval where concentrations of TCE exceeded 50 µg/L. Although VOC concentrations in soil gas samples collected during the 2011 investigation did not exceed the Water Board's ESLs for the protection of indoor air, the EPA and Water Board required an evaluation of indoor air at the 17 residences and former AMI building.

The residential buildings located with the Indoor Air Study Area are one- or two-story, single-family homes with an attached garage and crawl space beneath the foundation. The homes were constructed in the 1950s and have a footprint of approximately 1,200 to 1,700 square feet. The residential lots located in the Indoor Air Study Area are approximately 1/8 acre.

The former AMI building, which is currently occupied by Apple, Inc., is an approximately 60,000-square-foot, two-story commercial building comprised of office space and some limited lab areas (Figure 3). This building does not have a basement or crawl space.

4.0 OVERALL APPROACH

The vapor intrusion evaluation included the collection and analysis of indoor, crawl space, and outdoor air samples at buildings within the Indoor Air Study Area. Indoor and crawl space air samples were collected to directly measure concentrations of chemicals of concern (COCs) in groundwater and chloroform at each building sampled (see Section 4.2.4 for additional details on the COCs and chloroform). Outdoor air samples were collected to evaluate the potential effects of outdoor ambient air on indoor and/or crawl space air measurements.

The Work Plan (AMEC, 2012a) and Addendum (AMEC, 2012b) indicated that sub-slab samples might also be collected from the residential and commercial buildings. A crawl space was present at each of the residential buildings, so crawl space samples were collected instead of sub-slab samples. No sub-slab samples were collected from the commercial building at the time of indoor air sampling, at Apple and the building owner's request.

To preserve the confidentiality of the residential data, each residential building where sampling was conducted is described in this report using an identification number (i.e., RB1 through RB7). A confidential sample correlation log was provided to EPA and Water Board with the addresses associated with each identification number. Samples collected at the former AMI building were not confidential.

Immediately following sampling, all indoor air, crawl space, and ambient air samples were submitted to Eurofins Air Toxics Inc. (Air Toxics), a California Department of Public Health–certified laboratory, and analyzed for selected VOCs (see Section 4.2.4) using EPA Method

TO-15 with selective ion monitoring (SIM) to achieve low-level reporting limits. It should be noted that the Work Plan (AMEC, 2012a) indicated that samples would be shipped to TestAmerica Laboratories, Inc. (TestAmerica), of Costa Mesa, California. However, TestAmerica was unable to provide the number of required canisters for the residential sampling before the July 2012 sampling event. As such, Air Toxics was selected as a replacement, and the samples from the subsequent sampling events were also analyzed by Air Toxics.

The Work Plan also indicated that if concentrations of COCs in indoor air at a residence were greater than Tier 1 *and* Tier 2 or 3 screening criteria, confirmation samples would be collected following the same procedures as the initial samples, as soon as access could be arranged.

4.1 PRE-SAMPLING ACTIVITIES

Activities performed prior to the indoor air sampling are described in the following sections.

4.1.1 Residential Buildings

On July 10, 2012, Vicki Rosen and Matt Salazar of EPA, and Avery Patton of AMEC, personally delivered fact sheets to the 17 residences in the Indoor Air Study Area. As part of this effort, EPA knocked on the doors of each residence. If the resident was home, he or she was requested to participate in the indoor air testing and was provided a fact sheet. If the resident was not home, the fact sheet was left in the mail box. Seven of the 17 residents requested to participate in the indoor air sampling program (six of the residences were available for sampling in July 2012; the seventh residence was not available at that time and samples were collected in January 2013).

Immediately prior to conducting sampling at each residential building, a building survey (including low-level PID monitoring and an assessment of preferential pathways) and an interview with the building resident/tenant were conducted. AMEC and EPA conducted the building surveys at residences RB1 through RB6 on July 19, 2012 and at residence RB7 on January 22, 2013. Each residential building survey included a site walk to identify appropriate indoor, crawl space, and outdoor air sampling locations and to evaluate potential sources and uses of VOCs. A low-level PID was used to facilitate the identification of indoor sources of VOCs. In addition, AMEC staff screened each building for potential preferential pathways that may allow for subsurface vapors to enter into indoor air. Observations from the building surveys are summarized below.

Summary of Building Survey Observations at Residences Included in the Vapor Intrusion Evaluation Study

Residence ID	Potential Indoor Sources of VOCs	PID Detections	Potential Preferential Pathways
RB1	New memory foam pad mattress within past 6 months.	None	Drains in bathroom, kitchen
RB2	Smoking indoors.	None	Drains in bathroom, kitchen
RB3	None identified.	None	Drains in bathroom, kitchen
RB4	Pest control chemicals sprayed outside 3 to 4 days prior to sampling.	None	Drains in bathroom, kitchen
RB5	Within approximately the last 6 months, new carpet/furniture and paint.	None	Drains in bathroom, kitchen
RB6	New carpet/furniture, recently dry-cleaned clothes, one resident uses solvents at work.	None	Drains in bathroom, kitchen
RB7	Carpets cleaned in December, hobby or craft area located in garage.	None	Drains in bathroom, kitchen

4.1.2 Commercial Building

On November 13, 2012, a building survey was performed by AMEC and EPA with Larry Cowles of Apple; Kathleen Goodhart of Cooley, LLP, legal counsel for Apple; and Lyn Barshay of Menlo Equities Management Company, the property manager. The building survey included an interview with Mr. Cowles and Ms. Barshay and a pre-sampling site inspection with low-level PID monitoring to evaluate potential preferential pathways and indoor air sources of VOCs.

The details of the building survey for the commercial building are included in AMEC's November 27, 2012 submittal. As noted in that document, VOCs used in the lab areas include isopropyl alcohol, 2-butoxyethanol, and ethanolamine, none of which are among the list of VOCs to be analyzed in indoor air at the building.

There are three main HVAC units (AH1 through AH3) that service the former AMI building, with the air handling units located on the roof. Additionally, one other HVAC unit (AH4) services laboratories in the southwest corner of the building. Apple personnel turned off the HVAC approximately 34 hours prior to sampling (at 10pm on Friday, February 25), and it remained off until the sampling effort was complete. Documentation that the HVAC was off during sampling is included in Appendix A.

4.2 INDOOR, CRAWL SPACE, AND AMBIENT AIR SAMPLING

The sampling activities conducted as part of the study are described in the following sections.

4.2.1 Residential Buildings

Residential indoor air, crawl space, and outdoor ambient air samples were collected over an approximately 24-hour period, immediately after the building survey. AMEC sampled indoor air, crawl space, and outdoor ambient air at residences RB1 through RB6 on July 19 to July 20, 2012 and at residence RB7 on January 22 to 23, 2013. EPA was present during the sampling of RB1 through RB6, but not RB7.

Two primary indoor air samples were collected at each residence, for a total of 14 primary indoor air samples. At each building, one sample was located within a main living area, and another was located near an area with potential preferential pathways (i.e., the kitchen or a bathroom). Additionally, three blind field duplicate indoor air samples were collected simultaneously using T-splitters at residences RB4, RB6, and RB7. One crawl space sample was collected at each residence, with the exception of RB3 and RB6, where the crawl space was not accessible, for a total of five crawl space samples. Each crawl space that was sampled was accessed through a closet and the ground surface was unfinished. Outdoor ambient air samples were also collected at residences RB1, RB4, and RB7 concurrent with the indoor air sampling in those residences.

4.2.2 Commercial Building

On January 27, 2013, AMEC collected nine primary indoor air samples and one blind field duplicate indoor air sample at the former AMI building (Figure 3). Larry Cowles of Apple and Roger Lion of Erler & Kalinowski, Inc., environmental consultant for Apple, were also present. Two outdoor ambient air samples were also collected; one on the roof and one at ground level near the northwest corner of the building (in an approximately upwind direction).

The indoor air, crawl space, and outdoor ambient air samples at the former AMI building were collected over an approximately 10-hour period. The sampling period of 10 hours was based on a typical worker exposure period.

4.2.3 Field Methodology

The fieldwork was conducted by trained AMEC personnel (a California Professional Geologist). The samples were collected into 6-liter Summa™ canisters, fitted with designated, laboratory-supplied, flow controllers (24-hour flow controllers for the residential buildings and 10-hour flow controllers for the commercial building), all of which were individually certified by the analytical laboratory to be clean and free of contamination. The Summa™ canister media certification reports are presented in Appendix B. Sampling was conducted at each building using the following methodology:

- Prior to sampling, AMEC personnel removed the Swagelok® nut cap from each 6-liter Summa™ canister, attached the designated, laboratory-supplied flow controller to the canister, and then fitted the Swagelok® nut cap to the top of the flow controller. To test the vacuum in each canister and to confirm that there were no leaks in the fittings, AMEC personnel performed a "shut-in test" by briefly opening and then closing the valve on each canister, creating a vacuum within the flow controller, and monitoring the vacuum on the gauge on the flow controller for several minutes to confirm that it was stable. If the vacuum was not stable, the fittings were tightened and the test was performed again.
- Following the "shut-in test," AMEC personnel placed the canisters in their designated locations within and outside the building. Samples representative of the breathing zone were placed on boxes and/or other features such that the intake was at a level of approximately 3 to 5 feet above floor. Preferential pathway samples were placed on the floor adjacent to the potential pathway being evaluated. Crawl space samples were placed on the unfinished ground surface beneath the building, within arm's reach of the crawl space access point. Outdoor (ambient) air samples were placed at ground level or on the roof top.
- Each canister valve was then opened to allow sampling to commence, starting with the outdoor air samples. Approximately 30 minutes to 1 hour after commencing sampling, the canisters were checked to ensure that they were operating properly (i.e., by confirming that the vacuum in each canister had dropped from its initial reading).
- After approximately 24 hours for residential sampling and 10 hours for commercial sampling, with a vacuum of approximately -3 to -6 inches of mercury (in Hg) remaining in each canister, AMEC personnel closed the valve on each canister. The flow controller was then removed from each canister, and the Swagelok® nut cap was replaced on the canister to prevent leakage during transit.
- The canisters and flow controllers were then placed into cardboard boxes for shipment to Air Toxics for analysis.

The Air Sampling Form—Summa Canisters was completed during the sampling and includes basic project information, sampling information (including sample IDs, samples times, canister and flow controller IDs, and beginning and ending vacuums), and weather information. A copy of the Indoor Air Sampling Form—Summa Canisters is included in Appendix D.

The information recorded on the field sampling sheet was cross-checked with the information recorded on the sample identification tags attached to each canister and was used subsequently to prepare the chain-of-custody forms included with the sample shipment.

4.2.4 Laboratory Analysis

All samples were analyzed by Air Toxics using EPA Method TO-15 in SIM mode for the list of COCs for this investigation, as defined in the Work Plan (AMEC, 2012a). Specifically, the COCs for this investigation include the following:

- 1,1-dichloroethane (1,1-DCA),
- 1,1-dichlorethene (1,1-DCE),

- cis-1,2-DCE
- trans-1,2-dichloroethene (trans-1,2-DCE),
- Freon 113,
- 1,1,1-trichloroethane (1,1,1-TCA),
- TCE
- toluene,
- tetrachloroethene (PCE), and
- vinyl chloride.

In addition, EPA requested that chloroform be added to the list of analytes to evaluate whether chemicals in indoor air may be present in crawl space air unrelated to subsurface sources (personal communication with Mr. Matt Salazar, October 20, 2011). Chloroform is used as an indicator because it is present in tap water as a disinfection byproduct and, because it is volatile, it can be found in indoor air where tap water is used, such as residences. Chloroform measurements in indoor air and crawl space air are used to assess whether chloroform volatilizing from tap water use has affected crawl space air. If COCs also are measured in indoor air and crawl space air in similar ratios to chloroform, this may indicate that the source of these chemicals is not related to subsurface conditions but rather related to ambient indoor air conditions. Similarly, chloroform may be indicative of sub-slab conditions unrelated to vapor intrusion.

5.0 RESULTS

The following sections present the results of the vapor intrusion evaluation. The results for the residential buildings are summarized in Table 1, and the results for the commercial building are summarized in Table 2. Copies of the laboratory analytical reports and chain-of-custody records are included in Appendix E.

5.1 QUALITY ASSURANCE/QUALITY CONTROL EVALUATION

The purpose of the quality assurance/quality control (QA/QC) procedures is to assess the quality of the data by evaluating field equipment cleaning procedures, and the accuracy, precision, and completeness of the data. QA/QC procedures were described in the Quality Assurance Project Plan (QAPP) submitted with the Work Plan (AMEC, 2012a). AMEC reviewed analytical data consistent with EPA Region 9 Tier 2 (U.S. EPA, 2002) guidelines and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data* Review (National Functional Guidelines; U.S. EPA, 2008).

The field QA/QC samples included four blind field duplicate samples collected simultaneously with each corresponding primary sample using a T-splitter. The blind field duplicate samples were associated with the following primary indoor air samples: residential samples RB4-IA1-20120720 (labeled with a false identifier of RB4-IA3-20120720), RB6-IA1-20120720 (labeled

with a false identifier of RB6-IA3-20120720), and RB7-IA1-20130123 (labeled with a false identifier of RB7-IA3-20130123); and commercial sample AMI-IA4-20130127 (labeled with a false identifier of AMI-IA9-20130127). In addition, Air Toxics analyzed surrogate spike samples, method blank samples, laboratory control samples (LCSs), and laboratory control sample duplicates (LCSDs), and performed continuous calibration verification to provide internal quality control.

The Project Manager has reviewed the data in accordance with the National Functional Guidelines (U.S. EPA, 2008), and the Quality Assurance Officer also reviewed the data and confirmed that the Quality Assurance/Quality Control (QA/QC) procedures outlined in the Work Plan were met. The data generated meet all DQOs specified in the QAPP and considered complete. The complete data quality review is included in Appendix F.

5.2 METEOROLOGICAL DATA

Meteorological data for this investigation were obtained from the Moffett Field Meteorological Station, located in Moffett Field, near Mountain View, California (http://www.wunderground.com/history/airport/KNUQ/2013/1/27/DailyHistory.html?req_city=NA&req_state=NA&req_statename=NA). Data were collected for the time period corresponding to the sampling periods, and include maximum and minimum temperatures, precipitation accumulation, and a summary of hourly wind speed and direction. The meteorological data were cross-checked with field observations documented in the field sampling logs, and the published data matched our field observations.

5.3 SCREENING CRITERIA

The selection of screening criteria for evaluation of the analytical data collected in this investigation is presented in the Work Plan and Addendum, with the exception of screening level modifications presented in a memorandum from Kathleen Salyer of the EPA to Stephen Hill of the Water Board (EPA, 2013b). The analytical data were evaluated using a tiered approach, as defined below:

- Tier 1: Indoor air sample results were compared to outdoor air concentrations to evaluate whether indoor air quality may be affected by ambient sources.
- Tier 2: Indoor air sample results were compared to short-term health-risk-based screening criteria, including Minimal Risk Levels (MRLs) (ASTDR, 2013) or Interim Short-term Response Action Levels for TCE (EPA, 2013b).
- Tier 3: Indoor air sample results were compared to long-term health-risk-based screening criteria (Regional Screening Levels [RSLs], EPA, 2013a) or California-modified indoor air screening levels for PCE (EPA, 2013b).

The screening criteria selected for the Tier 2 and Tier 3 screening level assessments for the residential buildings and former AMI building are presented in Tables 1 and 2, respectively.

5.4 ANALYTICAL RESULTS

The analytical results for indoor, crawl space, and outdoor ambient air samples collected at residences RB1 through RB7 and the former AMI building are summarized below.

5.4.1 Residential Buildings

The indoor air results were greater than the Tier 1 screening criteria for toluene at each residence, and for chloroform, TCE, toluene, and PCE at residence RB7 (Table 1) (i.e., the reported concentrations of these chemicals in indoor air were higher than in outdoor air). However, no VOCs exceeded the Tier 2 or Tier 3 screening criteria, with the exception of TCE, which was detected at levels slightly above the RSL (Tier 3) in indoor air in building RB7 (concentrations in the crawl space were below the RSL).

Four VOCs were detected in the residential study (toluene, chloroform, TCE, and PCE). Toluene was detected in all residential air samples (i.e., from residences RB1 through RB7) and the associated outdoor air samples at concentrations approximately three to four orders of magnitude less than the Tier 2 (3,800 micrograms per cubic meter [µg/m^3]) and Tier 3 (5,200 µg/m^3) screening criteria. Toluene concentrations ranged from 0.90 to 7.6 µg/m^3 in indoor air samples, 0.14 to 6.4 µg/m^3 in crawl space samples, and 0.51 to 5.7 µg/m^3 in outdoor ambient air samples (Table 1).

Chloroform, TCE, and PCE were detected in the indoor and/or crawl space samples only at residence RB7. Chloroform is not a COC for the Indoor Air Study Area; it was analyzed as an indicator of the relationship between indoor air and crawl space air. Chloroform was detected in indoor air, but was not detected above the detection limit in crawl space air. TCE was detected in all three indoor air samples (two primary and one duplicate) collected at residence RB7 at concentrations (ranging from 0.44 to 0.53 µg/m^3) slightly exceeding the Tier 3 screening criterion (the residential RSL) for TCE (0.43 µg/m^3). TCE was also detected in the crawl space sample from residence RB7 at a concentration of 0.30 µg/m^3, which is less than the RSL. TCE was not detected in the outdoor air samples. PCE was detected in all three indoor air samples collected at RB7, but at concentrations (ranging from 0.25 to 0.28 µg/m^3) less than the RSL of 0.4 µg/m^3 for PCE. PCE was not detected in the crawl space air sample.

The Work Plan indicated that if concentrations of COCs in indoor air at a residence were greater than Tier 1 *and* Tier 2 or 3 screening criteria, confirmation samples would be collected following the same procedures as the initial samples, as soon as access could be arranged. As noted above, the results for one COC (TCE) at one building (RB7) marginally met these criteria.

Following receipt of the analytical data for building RB7 on February 8, 2013, AMEC provided the data to the Water Board and EPA via email on February 11, 2013. In a phone conversation between Ann Verwiel and Avery Patton of AMEC, Matt Salazar of the EPA, and Roger Papler

of the Water Board on February 21, 2013, Mr. Salazar indicated that, based on the results for TCE at RB7, the EPA would offer an additional round of sampling to the residents of RB7. Mr. Salazar indicated in a follow-up call with Ms. Patton on March 6, 2013 that the residents of RB7 had declined additional sampling. He indicated that no additional follow-up would be needed for RB7, other than to send a letter summarizing the results. However, additional testing will be offered to the residents of RB7 in January or February of 2014, in accordance with a December 11, 2013 letter from the Water Board to GE and SMI (Water Board, 2013b).

5.4.2 Commercial Building

The indoor air results at the commercial building were greater than the Tier 1 screening criteria for toluene at each sample location, and for chloroform and 1,1,1-TCA at one location each (Table 2) (i.e., the reported concentrations of these chemicals in indoor air were higher than in outdoor air). However, no VOCs exceeded the Tier 2 or Tier 3 screening criteria.

Chloroform is not a COC for the Indoor Air Study Area; it was analyzed as an indicator of the relationship between indoor air and sub-slab air (although sub-slab samples were not collected at the commercial building). 1,1,1-TCA was detected in one of the eight indoor air samples, but not in outdoor air. The detected concentration of 1,1,1-TCA (0.23 µg/m^3) was approximately five orders of magnitude below the commercial RSL of 22,000 µg/m^3. Toluene was detected in all samples at concentrations ranging from 4.8 to 7.0 µg/m^3 in indoor air samples and 0.28 to 0.41 µg/m^3 in outdoor ambient air samples. Toluene concentrations were approximately three to five orders of magnitude below the commercial RSL of 22,000 µg/m^3. Because no VOCs were detected above Tier 2 and 3 screening criteria in the commercial building, sub-slab sampling is not considered necessary.

6.0 DISCUSSION AND CONCLUSIONS

With the exceptions of the detections noted above, the concentrations in indoor and outdoor air are comparable, and no VOCs were detected above Tier 2 (short term) screening criteria. TCE was detected in one residential building (RB7) at a concentration slighter higher than the Tier 3 (long term) screening criterion.

The maximum detected concentration of TCE in residence RB7 (0.53 µg/m^3) is only slightly greater than the residential RSL (0.43 µg/m^3) and the concentration in the crawl space air sample was below the RSL. While TCE has been reported in groundwater near residence RB7, TCE and PCE were both detected at higher concentrations in indoor air than in crawl space air, indicating that the source of these chemicals may be from the use of household products. The RB7 resident noted that the carpets were recently cleaned and that there is a hobby area in the attached garage; cleaning products and glues can contain both PCE and TCE. For these reasons, measurements at RB7 are not considered indicators that VOCs in groundwater are migrating to indoor air.

Toluene concentrations reported in the commercial building were greater than ambient air concentrations by an order of magnitude, but remain three to five orders of magnitude below the Tier 2 screening level. Toluene is a common component of paints and adhesives, and is also common in commercial indoor air. The reported concentrations of toluene are not considered a reliable indicator that VOCs in groundwater are migrating to indoor air.

Chloroform was analyzed to evaluate whether chemicals in indoor air may be present in crawl space or sub-slab air unrelated to subsurface sources. Chloroform is generally present in indoor air due to drinking water. If chloroform is detected in crawl space or sub-slab air, it is possible that other chemicals present in indoor air (due to household/commercial or other above-ground sources) can migrate into the crawl space or sub-slab area. However, in this case, the detected concentrations of chloroform in indoor air are only slightly above the reporting limit; therefore, using chloroform results to evaluate the possible downward flow of indoor air is not possible.

While TCE and cis-1,2-DCE are the main COCs detected in groundwater in this area, there were no detections of cis-1,2-DCE in indoor air, TCE was detected above the screening level in only one home and may be due to indoor sources of the chemical, and the other VOCs detected in indoor air (toluene, PCE, and 1,1,1-TCA) are not present at elevated concentrations in groundwater (see Section 2). In addition, TCE and other VOC results were below their shallow soil gas ESLs for the protection of indoor air in residential areas in the samples collected along Homestead Road. Therefore, detections of these chemicals in indoor air are not likely related to vapor intrusion.

No other VOCs were detected in the residential buildings or the commercial building.

7.0 RECOMMENDATIONS

Although TCE was detected above the screening level in building RB7, the source of TCE is not likely related to vapor intrusion and as of March 2013, the resident was not interested in additional sampling. As such, no change to current occupancy of the building or remedial action is recommended. However, in accordance with the Water Board's December 11, 2013 letter to GE and SMI, additional testing will be offered to RB7 and the other residences in the Indoor Air Study Area in January or February 2014 (Water Board, 2013b). A work plan will be submitted to the Water Board by January 8, 2014 to address the requirements presented in the December 11, 2013 letter. Following the sampling, an addendum to this report will be prepared that documents the results of the additional sampling performed and provides updated conclusions and recommendations.

Based on the results of the commercial indoor air sampling, no further action related to vapor intrusion from groundwater is recommended at the former AMI building.

8.0 REFERENCES

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TABLES

TABLE 1

SUMMARY OF ANALYTICAL RESULTS FOR INDOOR, CRAWL SPACE, AND OUTDOOR AIR SAMPLES AT RESIDENTIAL BUILDINGS [1]

Intersil/Siemens Site, Indoor Air Study Area
Cupertino, California

All concentrations are presented in micrograms per cubic meter (µg/m^3)

Residence ID	Sample ID	Sample Type	Date Collected	Chloro-form	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	1,1,1-TCA	TCE	Toluene	PCE	Vinyl Chloride
RB1	RB1-CS1-20120720	Crawl Space	July 19-20, 2012	<0.87	<0.14	<0.071	<0.14	<0.71	<1.4	<0.20	<0.19	**0.72**	<0.24	<0.046
	RB1-IA1-20120720	Indoor Air	July 19-20, 2012	<0.89	<0.15	<0.072	<0.14	<0.72	<1.4	<0.20	<0.20	**1.4**	<0.25	<0.047
	RB1-IA2-20120720	Indoor Air	July 19-20, 2012	<0.83	<0.14	<0.068	<0.14	<0.68	<1.3	<0.19	<0.18	**1.4**	<0.23	<0.044
RB2	RB2-CS1-20120720	Crawl Space	July 19-20, 2012	<0.89	<0.15	<0.072	<0.14	<0.72	<1.4	<0.20	<0.20	**0.47**	<0.25	<0.047
	RB2-IA1-20120720	Indoor Air	July 19-20, 2012	<0.93	<0.15	<0.076	<0.15	<0.76	<1.5	<0.21	<0.20	**1.6**	<0.26	<0.049
	RB2-IA2-20120720	Indoor Air	July 19-20, 2012	<0.89	<0.15	<0.072	<0.14	<0.72	<1.4	<0.20	<0.20	**2.9**	<0.25	<0.047
RB3	RB3-IA1-20120720	Indoor Air	July 19-20, 2012	<0.91	<0.15	<0.074	<0.15	<0.74	<1.4	<0.20	<0.20	**1.2**	<0.25	<0.048
	RB3-IA2-20120720	Indoor Air	July 19-20, 2012	<1.4	<0.22	<0.11	<0.22	<1.1	<2.1	<0.30	<0.30	**0.92**	<0.38	<0.071
RB4	RB4-CS1-20120720	Crawl Space	July 19-20, 2012	<0.87	<0.14	<0.070	<0.14	<0.70	<1.4	<0.19	<0.19	**0.55**	<0.24	<0.046
	RB4-IA1-20120720	Indoor Air	July 19-20, 2012	<0.87	<0.14	<0.070	<0.14	<0.70	<1.4	<0.19	<0.19	**1.1**	<0.24	<0.046
	(RB4-IA3-20120720)	(Duplicate)		<0.84	<0.14	<0.068	<0.14	<0.68	<1.3	<0.19	<0.18	**1.2**	<0.23	<0.044
	RB4-IA2-20120720	Indoor Air	July 19-20, 2012	<0.84	<0.14	<0.068	<0.14	<0.68	<1.3	<0.19	<0.18	**0.90**	<0.23	<0.044
RB5	RB5-CS1-20120720	Crawl Space	July 19-20, 2012	<0.83	<0.14	<0.067	<0.13	<0.67	<1.3	<0.18	<0.18	**0.14**	<0.23	<0.043
	RB5-IA1-20120720	Indoor Air	July 19-20, 2012	<0.97	<0.16	<0.079	<0.16	<0.79	<1.5	<0.22	<0.21	**2.3**	<0.27	<0.051
	RB5-IA2-20120720	Indoor Air	July 19-20, 2012	<0.82	<0.14	<0.067	<0.13	<0.67	<1.3	<0.18	<0.18	**2.0**	<0.23	<0.043
RB6	RB6-IA1-20120720	Indoor Air	July 19-20, 2012	<0.79	<0.13	<0.064	<0.13	<0.64	<1.2	<0.18	<0.17	**1.9**	<0.22	<0.041
	(RB6-IA3-20120720)	(Duplicate)		<0.80	<0.13	<0.065	<0.13	<0.65	<1.3	<0.18	<0.18	**1.9**	<0.22	<0.042
	RB6-IA2-20120720	Indoor Air	July 19-20, 2012	<0.82	<0.14	<0.067	<0.13	<0.67	<1.3	<0.18	<0.18	**1.6**	<0.23	<0.043
RB7	RB7-CS1-20130123	Crawl Space	January 22-23, 2013	<0.89	<0.15	<0.072	<0.14	<0.72	<1.4	<0.20	**0.30**	**6.4 J**	<0.25	<0.047
	RB7-IA1-20130123	Indoor Air	January 22-23, 2013	**1.1**	<0.13	<0.063	<0.13	<0.63	<1.2	<0.17	**0.48**	**7.6 J**	**0.25**	<0.041
	(RB7-IA3-20130123)	(Duplicate)		**1.1**	<0.13	<0.065	<0.13	<0.65	<1.3	<0.18	**0.53**	**4.9 J**	**0.28**	<0.042
	RB7-IA2-20130123	Indoor Air	January 22-23, 2013	**1.1**	<0.13	<0.064	<0.13	<0.64	<1.2	<0.18	**0.44**	**4.9 J**	**0.26**	<0.041
			Maximum Detected Concentration	1.1	ND	ND	ND	ND	ND	ND	0.53	7.6	0.28	ND
Tier 1—Comparison to Background/Outdoor Ambient Air														
RB1	RB1-OA1-20120720	Ambient Air	July 19-20, 2012	<0.85	<0.14	<0.069	<0.14	<0.69	<1.3	<0.19	<0.19	**0.65**	<0.24	<0.045
RB4	RB4-OA1-20120720	Ambient Air	July 19-20, 2012	<0.89	<0.15	<0.072	<0.14	<0.72	<1.4	<0.20	<0.20	**0.51**	<0.25	<0.047
RB7	RB7-OA1-20130123	Ambient Air	January 22-23, 2013	<0.80	<0.13	<0.065	<0.13	<0.65	<1.3	<0.18	<0.18	**5.7 J**	<0.22	<0.042
Tier 2—Comparison of Short-Term Health Based Screening Criteria														
			Acute Inhalation MRL [2]	NA	NP	NP	793 [3]	790	NP	11,000	--	3,800	1,360	1,300
			Intermediate Inhalation MRL [4]	NA	NP	79.3	793 [3]	790	NP	3,800	--	NP	NP	77
			Interim Short-term Response Action Levels [5]	--	--	--	--	--	--	--	2	--	--	--
Tier 3 —Comparison to Long-Term Health Based Screening Criteria														
			Residential Screening Level – Indoor Air [6]	NA	1.5	210	63 [3]	63	31,000	5,200	0.43	5,200	0.4 [7]	0.16

TABLE 1

SUMMARY OF ANALYTICAL RESULTS FOR INDOOR, CRAWL SPACE, AND OUTDOOR AIR SAMPLES AT RESIDENTIAL BUILDINGS [1]

Intersil/Siemens Site, Indoor Air Study Area
Cupertino, California

Notes

1. Indoor, crawl space, and outdoor/background ambient air samples collected by AMEC into individually-certified 6-liter Summa™ canisters fitted with 24-hour flow-controllers and analyzed by Eurofins Air Toxics, Inc. of Folsom, California using EPA Method TO-15 in selective ion mode (SIM).
2. Minimal Risk Levels (MRLs) for acute exposures (i.e., exposure durations of 1 to 14 days) for the inhalation pathway (ATSDR, 2013).
3. Value published for trans-1,2-DCE is selected as a surrogate for cis-1,2-DCE.
4. Minimal Risk Levels (MRLs) for intermediate exposures (i.e., exposure durations of >14 to 365 days) for the inhalation pathway (ATSDR, 2013).
5. Interim Short-term Response Action Level specified by USEPA Region 9 (EPA, 2013b). Value is based on a hazard index of 1. Exceedance of this concentration levels triggers mitigation; exceedance of three times this concentration triggers an immediate response.
6. Regional Screening Levels (RSLs) for residential air (EPA, 2013a). Lower of cancer or noncancer values presented.
7. The current RSL for PCE of 9.4 µg/m^3 reflects recent updates to PCE's toxicity criteria by EPA. California has not yet adopted these revised criteria. Therefore, the screening level for PCE is based on California's toxicity criterion and EPA's methods for estimating exposure.

Abbreviations

Bold indicates concentrations detected above reporting limit.
Shaded values exceed Tier 3 long-term screening level.
Duplicate sample results presented in parentheses.
< = not detected above the laboratory analytical reporting limit
1,1-DCA = 1,1-dichloroethane
1,1-DCE = dichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
trans-1,2-DCE = trans-1,2-dichloroethene
Freon 113 = 1,1,2-trichloro-1,2,2-trifluoroethane
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NA = not applicable; chloroform is measured as an indicator of the connection between indoor air and crawl space air and is not a COC for indoor air at this site
ND = not detected
NP = not published
TCE = trichloroethene
PCE = tetrachloroethene
1,1,1-TCA = 1,1,1-trichloroethane

References

Agency for Toxic Substances & Disease Registry (ATSDR), 2013, Minimal Risk Levels (MRLs) for Hazardous Substances, July. http://www.atsdr.cdc.gov/mrls/mrllist.asp

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U.S. Environmental Protection Agency (EPA), 2013b, Memorandum from Kathleen Salyer of the U.S. EPA to Stephen Hill, Chief, Toxic Cleanup Division, California Regional Quality Control Board, December 3.

TABLE 2

SUMMARY OF ANALYTICAL RESULTS FOR INDOOR AND OUTDOOR AIR SAMPLES AT FORMER AMI BUILDING [1]

Intersil/Siemens Site, Indoor Air Study Area
Cupertino, California

All concentrations are presented in micrograms per cubic meter (µg/m^3)

Sample ID	Sample Type	Date Collected	Chloro-form	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	Freon 113	1,1,1-TCA	TCE	Toluene	PCE	Vinyl Chloride
AMI-IA1-20130127	Indoor Air	January 27, 2013	<0.82	<0.14	<0.067	<0.13	<0.67	<1.3	<0.18	<0.18	**4.8**	<0.23	<0.043
AMI-IA2-20130127	Indoor Air	January 27, 2013	<0.84	<0.14	<0.068	<0.14	<0.68	<1.3	<0.19	<0.18	**7.0**	<0.23	<0.044
AMI-IA3-20130127	Indoor Air	January 27, 2013	<0.87	<0.14	<0.071	<0.14	<0.71	<1.4	<0.20	<0.19	**5.8**	<0.24	<0.046
AMI-IA4-20130127	Indoor Air	January 27, 2013	<0.88	<0.15	<0.072	<0.14	<0.72	<1.4	<0.20	<0.19	**6.7**	<0.24	<0.046
(AMI-IA9-20130127)	(Duplicate)		<0.87	<0.14	<0.071	<0.14	<0.71	<1.4	<0.20	<0.19	**6.8**	<0.24	<0.046
AMI-IA5-20130127	Indoor Air	January 27, 2013	**0.91**	<0.14	<0.069	<0.14	<0.69	<1.3	<0.19	<0.19	**5.0**	<0.24	<0.045
AMI-IA6-20130127	Indoor Air	January 27, 2013	<0.89	<0.15	<0.072	<0.14	<0.72	<1.4	<0.20	<0.20	**5.7**	<0.25	<0.047
AMI-IA7-20130127	Indoor Air	January 27, 2013	<0.88	<0.15	<0.072	<0.14	<0.72	<1.4	<0.20	<0.19	**5.6**	<0.24	<0.046
AMI-IA8-20130127	Indoor Air	January 27, 2013	<0.83	<0.14	<0.067	<0.13	<0.67	<1.3	**0.23**	<0.18	**6.0**	<0.23	<0.043
AMI-IA9-20130127	Indoor Air	January 27, 2013	<0.87	<0.14	<0.071	<0.14	<0.71	<1.4	<0.20	<0.19	**6.8**	<0.24	<0.046
Maximum Detected Concentration			0.91	ND	ND	ND	ND	ND	0.23	ND	7.0	ND	ND
Tier 1—Comparison to Background/Outdoor Ambient Air													
AMI-OA1-20130127	Ambient Air	January 27, 2013	<0.79	<0.13	<0.064	<0.13	<0.64	<1.2	<0.18	<0.17	**0.28**	<0.22	<0.041
AMI-OA2-20130127	Ambient Air	January 27, 2013	<0.80	<0.13	<0.065	<0.13	<0.65	<1.3	<0.18	<0.18	**0.41**	<0.22	<0.042
Tier 2—Comparison of Short-Term Health Based Screening Criteria													
Acute Inhalation MRL [2]			NA	NP	NP	793 [3]	790	NP	11,000	--	3,800	1,360	1,300
Intermediate Inhalation MRL [4]			NA	NP	79.3	793 [3]	790	NP	3,800	--	NP	NP	77
Interim Short-term Response Action Level [5]			--	--	--	--	--	--	--	7.0	--	--	--
Tier 3—Comparison to Long-Term Health Based Screening Criteria													
Commercial/Industrial Screening Level – Indoor Air [6]			NA	7.7	880	260 [3]	260	130,000	22,000	3.0	22,000	2 [7]	2.8

Notes

1. Indoor and outdoor/background ambient air samples collected by AMEC into individually-certified 6-liter Summa™ canisters fitted with 8-hour flow-controllers and analyzed by Eurofins Air Toxics, Inc. of Folsom, California using EPA Method TO-15 in selective ion mode (SIM).
2. Minimal Risk Levels (MRLs) for acute exposures (i.e., exposure durations of 1 to 14 days) for the inhalation pathway (ATSDR, 2011).
3. Value published for trans-1,2-DCE is used as a surrogate for cis-1,2-DCE.
4. Minimal Risk Levels (MRLs) for intermediate exposures (i.e., exposure durations of >14 to 365 days) for the inhalation pathway (ATSDR, 2013).
5. Interim Short-term Response Action Level specified by USEPA Region 9 (EPA, 2013b). Value is based on a 10-hour workday and a hazard index of 1. Exceedance of this concentration levels triggers mitigation; exceedance of three times this concentration triggers an immediate response.
6. Regional Screening Levels (RSLs) for industrial air (EPA, 2013a). Lower of cancer or noncancer values presented.
7. The current RSL for PCE of 47 µg/m^3 reflects recent updates to PCE's toxicity criteria by EPA. However, California has not yet adopted these revised criteria. Therefore, the screening level for PCE is based on California toxicity criterion and EPA's methods for estimating exposure.

TABLE 2

SUMMARY OF ANALYTICAL RESULTS FOR INDOOR AND OUTDOOR AIR SAMPLES AT FORMER AMI BUILDING [1]

Intersil/Siemens Site, Indoor Air Study Area
Cupertino, California

Abbreviations

Bold indicates concentrations detected above reporting limit.
Duplicate sample results presented in parentheses.
< = not detected above the laboratory analytical reporting limit
1,1-DCA = 1,1-dichloroethane
1,1-DCE = 1,1-dichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
trans-1,2-DCE = trans-1,2-dichloroethene
Freon 113 = 1,1,2-trichloro-1,2,2-trifluoroethane
NA = not applicable; chloroform is measured as an indicator of the connection between indoor air and crawl space air and is not a COC for indoor air at this site
ND = not detected
NP = not published
TCE = trichloroethene
PCE = tetrachloroethene
1,1,1-TCA = 1,1,1-trichloroethene

References

Agency for Toxic Substances & Disease Registry (ATSDR), 2013, Minimal Risk Levels (MRLs) for Hazardous Substances, July. http://www.atsdr.cdc.gov/mrls/mrllist.asp

U.S. Environmental Protection Agency (EPA), Regions 3, 6, and 9, 2013a, Regional Screening Levels for Chemical Contaminants at Superfund Sites, November. http://www.epa.gov/region9/superfund/prg/

U.S. Environmental Protection Agency (EPA), 2013b, Memorandum from Kathleen Salyer of the U.S. EPA to Stephen Hill, Chief, Toxic Cleanup Division, California Regional Quality Control Board, December 3.

FIGURES

Glenbar Ave
Partridge Ave
Parrot Ave
Oriole Ave
Clovestrer Ct
Firth Ct
Hamshire Ct
Lochnivar Ave
Teal Dr
Laurelwood Elementary School
Former Marchese Orchards - No. 2
Inverness Way
Kensington Ave
Katrine Way
Katrine Ct
Kerry Way
Peacock Ave
Lochnivar Ave
Benton St
Kent Ave
Wren Ave
EXPRESSWAY
LAWRENCE
Kintyre Way
Kildare Ave
Lanark Ct
Swift Ct
Lerwick Ct
Joint Intersil/Siemens Off-Site Study Area and Vicinity
Quail Ave
Redwing Dr
Sparrow Ct
Swallow Way
Warbler Way
Calabazas Creek
Vireo Ave
Waxwing Ave
Leighton Way
Lockness Ct
Lorne Way
Residential Buildings
London Ave
Homestead Rd
Commercial Building
Former AMI Building 700-800
AMI Building 500
AMI Building 100
Kaiser Permanente Buildings (Former Marchese Orchards - No. 1)
Former Hewlett-Packard (HP) Site
Kaiser Permanente Building (Former Siemens Building)
Former Siemens Facility
Former AMI Parking Structure
Swallow Way
AMI Building 400
AMI Building 300
AMI Building 200
Former American Microsystems, Inc. Facility
North Tantau Ave
HP Building 43
HP Building 44
HP Building 45
HP Building 48
HP Building 47
HP Building 46
Groundwater Treatment System
Former Intersil Building T2
Former Intersil Facility
Melody Ln
Meadow Ave
Shasta Drive
Hubbard Ave

EXPLANATION

- Property boundary
- Creek
- Existing building
- Demolished building
- Former Siemens Facility
- Former Intersil Facility
- Indoor Air Study Area

Notes:

1. Basemap modified from plot plan: "Location of Monitoring Wells at Intersil Facilities," prepared by Ruth and Going, Inc., September 25, 1986, and November 1990, Job No. 17040-122.
2. Intersil building T-2 demolished in 1997.

N

0 400

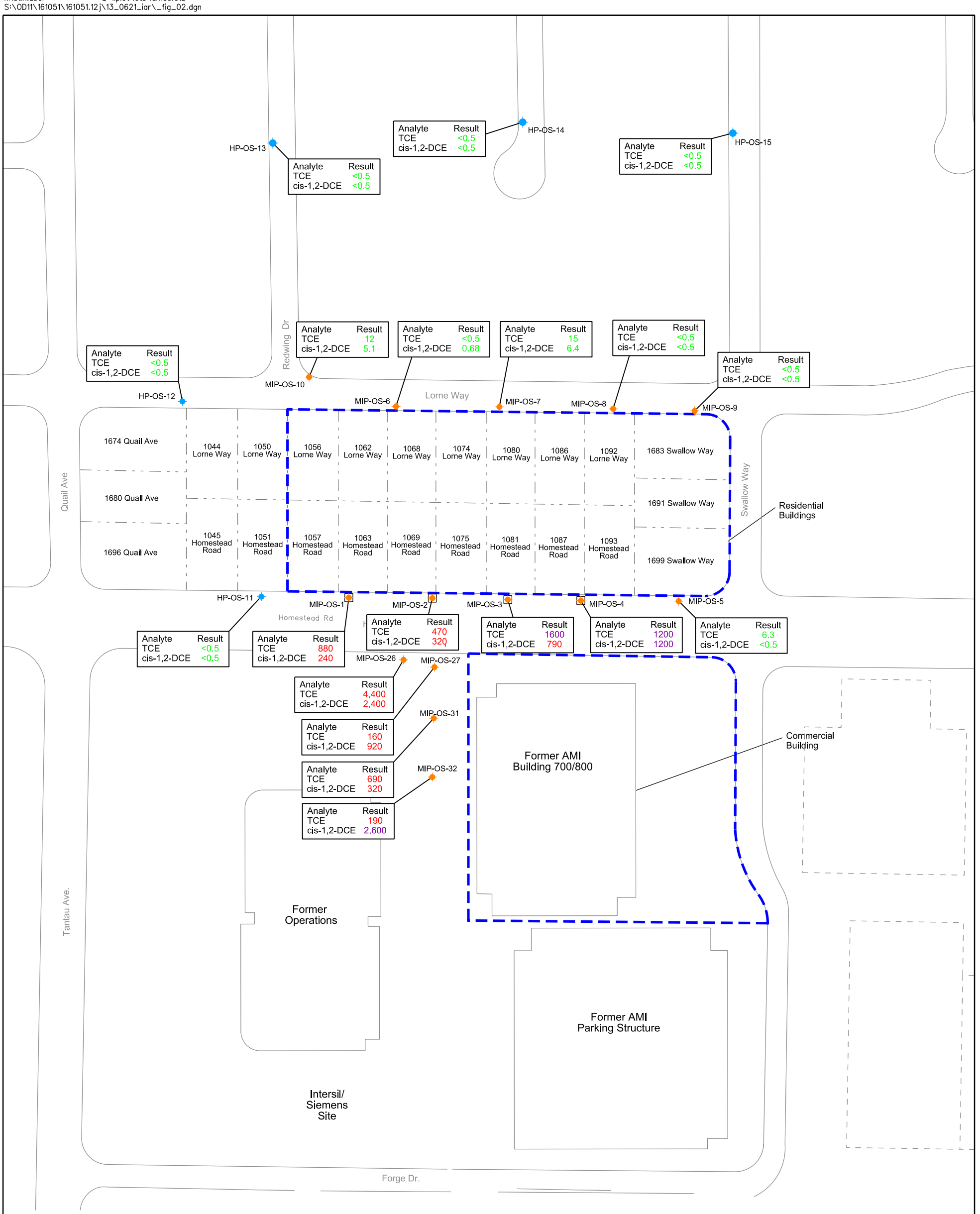
Scale in Feet

SITE LOCATION
Intersil/Siemens Site, Indoor Air Study Area
Cupertino, California

By: AWP	Date: 6/21/2013	Project No. OD11161051.12J
amec		Figure 1

Q:\plot\ctb\amec.ctb
S:\OD11\161051\161051.12J\13_0621_iar_fig_01.dgn
kristin.uber

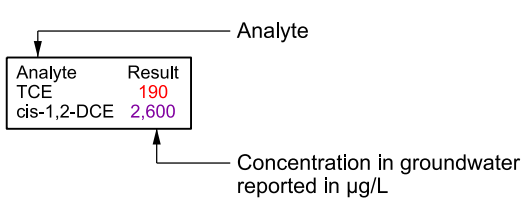
kristin.uber Q:\iplot\ctb\amec.ctb
S:\OD11\161051\161051.12j\13_0621_iar_fig_02.dgn

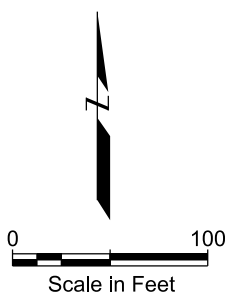


EXPLANATION

- Indoor Air Study Area
- Membrane interface probe (MIP) location (July 2011)
- Hydropunch location (HP) location (August 2011)
- TCE = Trichloroethene
- cis-1,2-DCE = cis-1,2-Dichloroethene
- µg/L = micrograms per liter

Green : TCE/cis-1,2-DCE concentration <= 50 µg/L
Orange : TCE/cis-1,2-DCE concentration 51-99 µg/L
Red : TCE/cis-1,2-DCE concentration 100-999 µg/L
Purple : TCE/cis-1,2-DCE concentration >= 1,000 µg/L
□ : locations where soil gas sample collected at 10 feet below ground surface





Notes:
1. Regional groundwater flow is to the north.
2. Only groundwater data in the vicinity of the indoor air study area is presented on the figure.

A1-DEPTH-INTERVAL GROUNDWATER IN THE VICINITY OF THE INDOOR AIR STUDY AREA
Intersil/Siemens Site, Indoor Air Study Areas
Cupertino, California

By: AWP	Date: 06/21/2013	Project No. OD11161051.12J
amec		Figure 2

OA1

EXPLANATION

AMEC indoor air sample location

AMEC outdoor air sample location

Notes:

1. IA7 and IA8 were collected near the elevator on the first and second floors, respectively.
2. Sample OA2 collected on roof above room 110.

0 25

APPROXIMATE SCALE IN FEET

Source:
Map of first floor of 18880 Homestead Avenue building provided by Apple, Inc.

INDOOR AIR SAMPLE LOCATIONS
FORMER AMI BUILDING 700/800
Intersil/Siemens Site, Indoor Air Study Area
Cupertino, California

By: AWP	Date: 06/21/2013	Project No. OD1161051.12J
amec		Figure 3

S:\OD11\161051\161051.12J\13_0621_iar_fig_03.ai

APPENDIX A

HVAC Documentation

From: Craig Wesner [mailto:cwesner@apple.com]
Sent: Friday, February 22, 2013 11:53 AM
To: Patton, Avery
Cc: Lawrence Cowles
Subject: Re: HS-01 Air Sampling

Hi Avery,

Sure thing, I've included the raw data in a spreadsheet in case you wanted to modify the format.

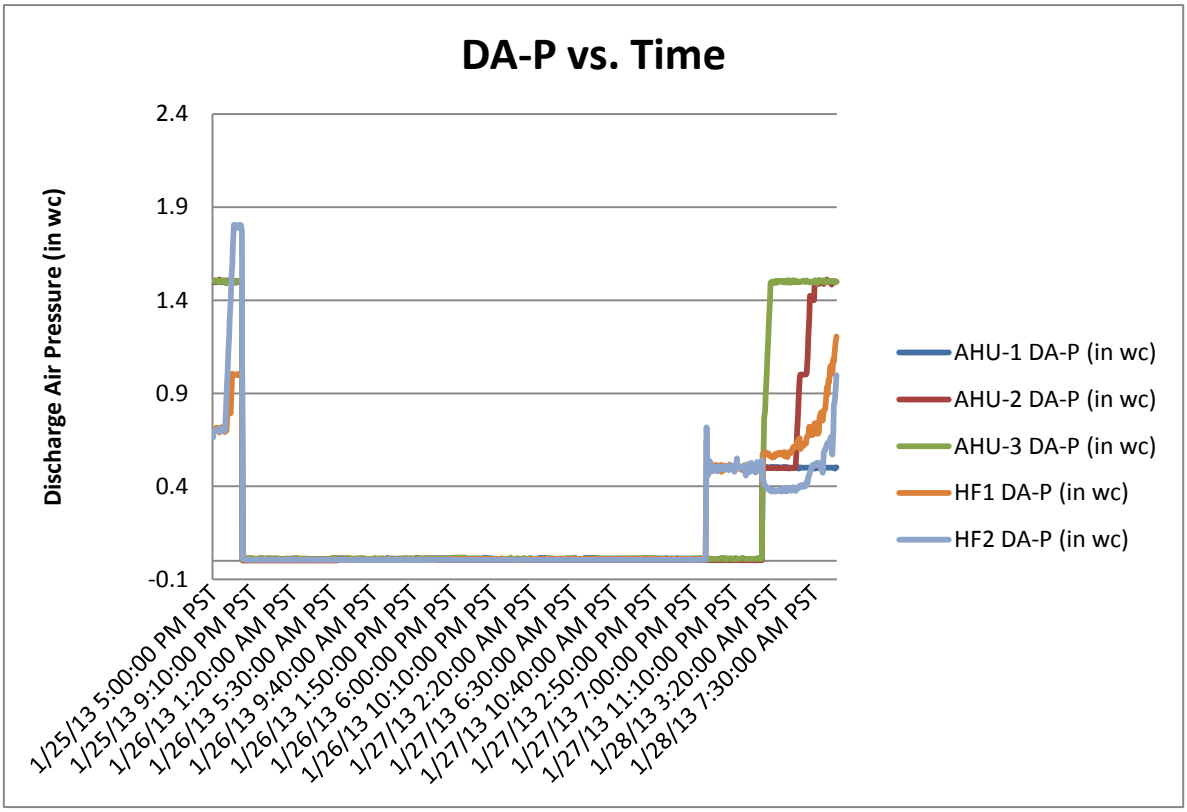
One thing worth mentioning is that AHU-4 looks like it has a faulty DP sensor, which happens occasionally (more often than I'd like) due to the pneumatic tubing getting pinched or plugged with debris from the roof.

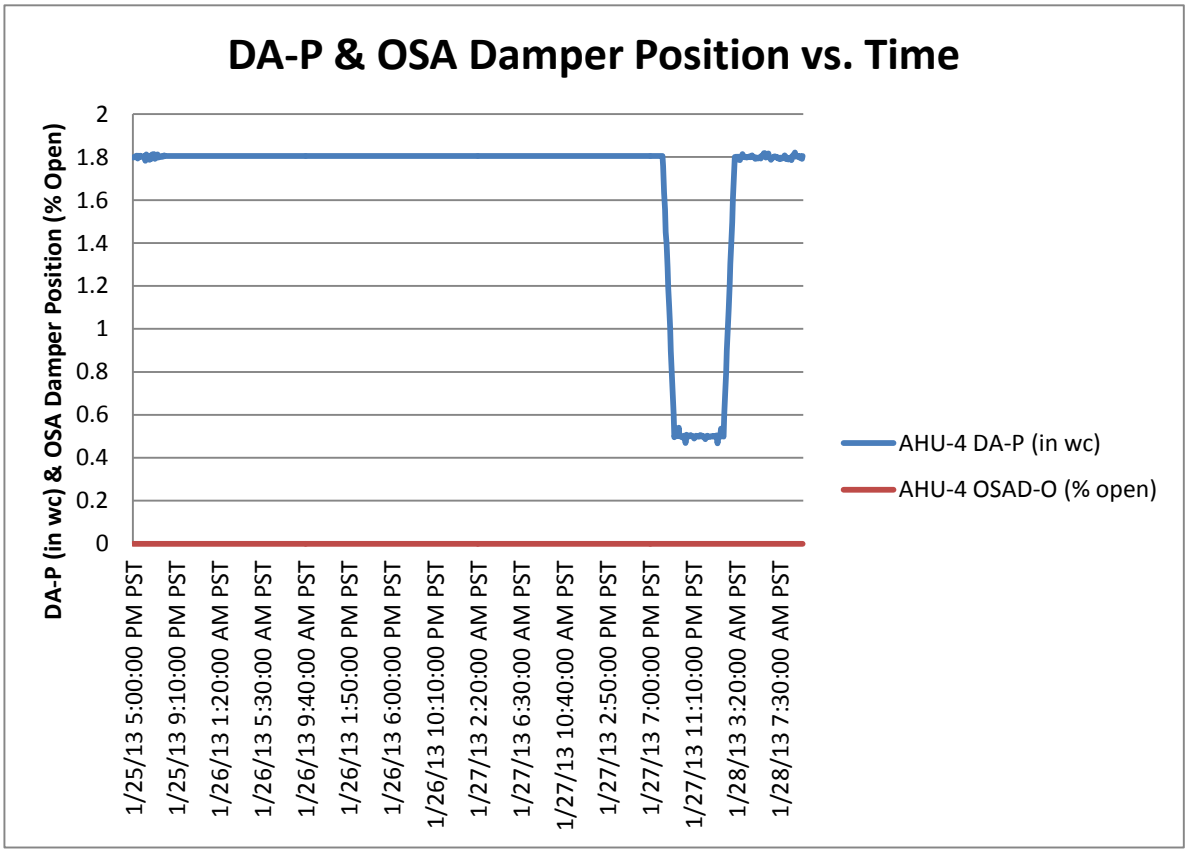
To validate no outside air entered the building during the course of the test, I've included a separate trend for AHU-4 displaying that the OSA damper was closed during the test.

If you have any questions feel free to call or email.

_____

Thanks,
Craig


DA-P vs. Time
Discharge Air Pressure (in wc)
2.4
1.9
1.4
0.9
0.4
-0.1
1/25/13 5:00:00 PM PST
1/25/13 9:10:00 PM PST
1/26/13 1:20:00 AM PST
1/26/13 5:30:00 AM PST
1/26/13 9:40:00 AM PST
1/26/13 1:50:00 PM PST
1/26/13 6:00:00 PM PST
1/26/13 10:10:00 PM PST
1/27/13 2:20:00 AM PST
1/27/13 6:30:00 AM PST
1/27/13 10:40:00 AM PST
1/27/13 2:50:00 PM PST
1/27/13 7:00:00 PM PST
1/27/13 11:10:00 PM PST
1/28/13 3:20:00 AM PST
1/28/13 7:30:00 AM PST
AHU-1 DA-P (in wc)
AHU-2 DA-P (in wc)
AHU-3 DA-P (in wc)
HF1 DA-P (in wc)
HF2 DA-P (in wc)


DA-P & OSA Damper Position vs. Time
DA-P (in wc) & OSA Damper Position (% Open)
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1/25/13 5:00:00 PM PST
1/25/13 9:10:00 PM PST
1/26/13 1:20:00 AM PST
1/26/13 5:30:00 AM PST
1/26/13 9:40:00 AM PST
1/26/13 1:50:00 PM PST
1/26/13 6:00:00 PM PST
1/26/13 10:10:00 PM PST
1/27/13 2:20:00 AM PST
1/27/13 6:30:00 AM PST
1/27/13 10:40:00 AM PST
1/27/13 2:50:00 PM PST
1/27/13 7:00:00 PM PST
1/27/13 11:10:00 PM PST
1/28/13 3:20:00 AM PST
1/28/13 7:30:00 AM PST
AHU-4 DA-P (in wc)
AHU-4 OSAD-O (% open)

APPENDIX B

Summa™ Canister Media Certification Reports

eurofins | Air Toxics

www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L#34754 w/24hr#40042
Can#: 86151-34754
Date : 07/17/12 21:23
Data File: 9071720sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	90.00	% Recovery
Toluene-d8	2037-26-5	88.00	% Recovery
4-Bromofluorobenzene	460-00-4	110.00	% Recovery

eurofins | Air Toxics

www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L#33583 w/24hr#40620
Can#: 86151-33583
Date : 07/18/12 7:04
Data File: 9071735sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	83.00	% Recovery
Toluene-d8	2037-26-5	82.00	% Recovery
4-Bromofluorobenzene	460-00-4	99.00	% Recovery

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www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L#33863 w/24hr#40482
Can#: 86151-33863
Date : 07/17/12 6:26
Data File: i071634sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	98.00	% Recovery
Toluene-d8	2037-26-5	99.00	% Recovery
4-Bromofluorobenzene	460-00-4	100.00	% Recovery

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Media Certification Report

Canister Number: 6L#33577 w/24hr#6443
Can#: 86151-33577
Date : 07/17/12 7:03
Data File: i071635sim.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	98.00	% Recovery
Toluene-d8	2037-26-5	100.00	% Recovery
4-Bromofluorobenzene	460-00-4	96.00	% Recovery

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Media Certification Report

Canister Number: 6L#34389 w/24hr#40764
Can#: 86151-34389
Date : 07/17/12 15:41
Data File: 9071711sim.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	95.00	% Recovery
Toluene-d8	2037-26-5	91.00	% Recovery
4-Bromofluorobenzene	460-00-4	104.00	% Recovery

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www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L#5772 w/24hr#40548
Can#: 86151-5772
Date : 07/18/12 2:00
Data File: 9071727sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	96.00	% Recovery
Toluene-d8	2037-26-5	88.00	% Recovery
4-Bromofluorobenzene	460-00-4	91.00	% Recovery

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Media Certification Report

Canister Number: 6L#5605 w/24hr#6331
Can#: 86151-5605
Date : 07/18/12 5:48
Data File: 9071733sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	98.00	% Recovery
Toluene-d8	2037-26-5	82.00	% Recovery
4-Bromofluorobenzene	460-00-4	101.00	% Recovery

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1-800-985-5955

Media Certification Report

Canister Number: 6L#32114 w/24hr#40325
Can#: 86151-32114
Date : 07/17/12 23:27
Data File: 9071723sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	89.00	% Recovery
Toluene-d8	2037-26-5	101.00	% Recovery
4-Bromofluorobenzene	460-00-4	100.00	% Recovery

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www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L#10782 w/24hr#40450
Can#: 86151-10782
Date : 07/18/12 2:38
Data File: 9071728sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	82.00	% Recovery
Toluene-d8	2037-26-5	89.00	% Recovery
4-Bromofluorobenzene	460-00-4	108.00	% Recovery

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Media Certification Report

Canister Number: 6L#34441 w/24hr#40129
Can#: 86151-34441
Date : 07/18/12 3:16
Data File: 9071729sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	85.00	% Recovery
Toluene-d8	2037-26-5	96.00	% Recovery
4-Bromofluorobenzene	460-00-4	108.00	% Recovery

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Media Certification Report

Canister Number: 6L#9940 w/24hr#40535
Can#: 86151-9940
Date : 07/18/12 6:26
Data File: 9071734sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	95.00	% Recovery
Toluene-d8	2037-26-5	106.00	% Recovery
4-Bromofluorobenzene	460-00-4	111.00	% Recovery

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Media Certification Report

Canister Number: 6L#5636 w/24hr#40183
Can#: 86151-5636
Date : 07/18/12 5:10
Data File: 9071732sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	95.00	% Recovery
Toluene-d8	2037-26-5	109.00	% Recovery
4-Bromofluorobenzene	460-00-4	105.00	% Recovery

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www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L#12330 w/24hr#40471
Can#: 86151-12330
Date : 07/18/12 0:43
Data File: 9071725sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	80.00	% Recovery
Toluene-d8	2037-26-5	99.00	% Recovery
4-Bromofluorobenzene	460-00-4	106.00	% Recovery

eurofins | Air Toxics

Media Certification Report

Canister Number: 6L#33551 w/24hr#40102
Can#: 86151-33551
Date : 07/17/12 22:11
Data File: 9071721sim.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	96.00	% Recovery
Toluene-d8	2037-26-5	99.00	% Recovery
4-Bromofluorobenzene	460-00-4	100.00	% Recovery

eurofins | Air Toxics

www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L#33562 w/24hr#40546
Can#: 86151-33562
Date : 07/18/12 3:54
Data File: 9071730sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	78.00	% Recovery
Toluene-d8	2037-26-5	105.00	% Recovery
4-Bromofluorobenzene	460-00-4	118.00	% Recovery

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Media Certification Report

Canister Number: 6L#33676 w/24hr#40472
Can#: 86151-33676
Date : 07/17/12 20:07
Data File: 9071718sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	97.00	% Recovery
Toluene-d8	2037-26-5	103.00	% Recovery
4-Bromofluorobenzene	460-00-4	102.00	% Recovery

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Media Certification Report

Canister Number: 6L#944 w/24hr#40601
Can#: 86151-944
Date : 07/17/12 18:51
Data File: 9071716sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	88.00	% Recovery
Toluene-d8	2037-26-5	106.00	% Recovery
4-Bromofluorobenzene	460-00-4	99.00	% Recovery

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Media Certification Report

Canister Number: 6L#33991 w/24hr#40591
Can#: 86151-33991
Date : 07/17/12 19:29
Data File: 9071717sim.d

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Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	95.00	% Recovery
Toluene-d8	2037-26-5	90.00	% Recovery
4-Bromofluorobenzene	460-00-4	102.00	% Recovery

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Media Certification Report

Canister Number: 6L#1555 w/24hr#6533
Can#: 86151-1555
Date : 07/18/12 0:05
Data File: 9071724sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	97.00	% Recovery
Toluene-d8	2037-26-5	94.00	% Recovery
4-Bromofluorobenzene	460-00-4	104.00	% Recovery

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Media Certification Report

Canister Number: 6L#33962 w/24hr#40320
Can#: 86151-33962
Date : 07/17/12 16:19
Data File: 9071712sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	96.00	% Recovery
Toluene-d8	2037-26-5	96.00	% Recovery
4-Bromofluorobenzene	460-00-4	115.00	% Recovery

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Media Certification Report

Canister Number: 6L#32109 w/24hr#40120
Can#: 86151-32109
Date : 07/17/12 18:13
Data File: 9071715sim.d

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Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	86.00	% Recovery
Toluene-d8	2037-26-5	91.00	% Recovery
4-Bromofluorobenzene	460-00-4	110.00	% Recovery

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Media Certification Report

Canister Number: 6L#3574 w/24hr#40420
Can#: 86151-3574
Date : 07/17/12 17:35
Data File: 9071714sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	89.00	% Recovery
Toluene-d8	2037-26-5	104.00	% Recovery
4-Bromofluorobenzene	460-00-4	94.00	% Recovery

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Media Certification Report

Canister Number: 6L#34408 w/24hr#40565
Can#: 86151-34408
Date : 07/18/12 1:21
Data File: 9071726sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	90.00	% Recovery
Toluene-d8	2037-26-5	90.00	% Recovery
4-Bromofluorobenzene	460-00-4	102.00	% Recovery

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Media Certification Report

Canister Number: 6L#33981 w/24hr#40326
Can#: 86151-33981
Date : 07/17/12 22:49
Data File: 9071722sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	91.00	% Recovery
Toluene-d8	2037-26-5	87.00	% Recovery
4-Bromofluorobenzene	460-00-4	110.00	% Recovery

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Media Certification Report

Canister Number: 6L#409 w/24hr#40432
Can#: 86151-409
Date : 07/16/12 23:35
Data File: i071623sim.d

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Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	97.00	% Recovery
Toluene-d8	2037-26-5	101.00	% Recovery
4-Bromofluorobenzene	460-00-4	99.00	% Recovery

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Media Certification Report

Canister Number: 6L#1521 w/24hr#40624
Can#: 86151-1521
Date : 07/17/12 3:56
Data File: i071630sim.d

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Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	99.00	% Recovery
Toluene-d8	2037-26-5	100.00	% Recovery
4-Bromofluorobenzene	460-00-4	102.00	% Recovery

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Media Certification Report

Canister Number: 6L#12048 w/24hr#40107
Can#: 86151-12048
Date : 07/17/12 2:04
Data File: i071627sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	100.00	% Recovery
Toluene-d8	2037-26-5	100.00	% Recovery
4-Bromofluorobenzene	460-00-4	97.00	% Recovery

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Media Certification Report

Canister Number: 6L#5641 w/24hr#40768
Can#: 86151-5641
Date : 07/17/12 4:33
Data File: i071631sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	100.00	% Recovery
Toluene-d8	2037-26-5	102.00	% Recovery
4-Bromofluorobenzene	460-00-4	95.00	% Recovery

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Media Certification Report

Canister Number: 6L#5596 w/24hr#40443
Can#: 86151-5596
Date : 07/17/12 0:50
Data File: i071625sim.d

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Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	100.00	% Recovery
Toluene-d8	2037-26-5	102.00	% Recovery
4-Bromofluorobenzene	460-00-4	99.00	% Recovery

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Media Certification Report

Canister Number: 6L#5675 w/24hr#100295
Can#: 86151-5675
Date : 07/17/12 5:11
Data File: i071632sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	102.00	% Recovery
Toluene-d8	2037-26-5	99.00	% Recovery
4-Bromofluorobenzene	460-00-4	101.00	% Recovery

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Media Certification Report

Canister Number: 6L#34344 w/24hr#40061
Can#: 86151-34344
Date : 07/17/12 1:27
Data File: i071626sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	100.00	% Recovery
Toluene-d8	2037-26-5	98.00	% Recovery
4-Bromofluorobenzene	460-00-4	98.00	% Recovery

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Media Certification Report

Canister Number: 6L#34006 w/24hr#40114
Can#: 86151-34006
Date : 07/17/12 0:13
Data File: i071624sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	100.00	% Recovery
Toluene-d8	2037-26-5	100.00	% Recovery
4-Bromofluorobenzene	460-00-4	97.00	% Recovery

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Media Certification Report

Canister Number: 6L#9410 w/24hr#40437
Can#: 86151-9410
Date : 07/17/12 3:19
Data File: i071629sim.d

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Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	100.00	% Recovery
Toluene-d8	2037-26-5	102.00	% Recovery
4-Bromofluorobenzene	460-00-4	98.00	% Recovery

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Media Certification Report

Canister Number: 6L#34318 w/24hr#40509
Can#: 86151-34318
Date : 07/16/12 21:24
Data File: i071622sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	99.00	% Recovery
Toluene-d8	2037-26-5	97.00	% Recovery
4-Bromofluorobenzene	460-00-4	96.00	% Recovery

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Media Certification Report

Canister Number: 6L#12670 w/24hr#40602
Can#: 86151-12670
Date : 07/17/12 2:42
Data File: i071628sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	101.00	% Recovery
Toluene-d8	2037-26-5	99.00	% Recovery
4-Bromofluorobenzene	460-00-4	98.00	% Recovery

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www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L#4350 w/24hr#40634
Can#: 88627-4350
Date : 12/11/12 14:22
Data File: i121112sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	98.00	% Recovery
Toluene-d8	2037-26-5	107.00	% Recovery
4-Bromofluorobenzene	460-00-4	103.00	% Recovery

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1-800-985-5955

Media Certification Report

Canister Number: 6L#34306 w/24hr#40175
Can#: 88627-34306
Date : 12/11/12 13:08
Data File: i121110sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	101.00	% Recovery
Toluene-d8	2037-26-5	106.00	% Recovery
4-Bromofluorobenzene	460-00-4	107.00	% Recovery

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Media Certification Report

Canister Number: 6L#36049 w/24hr#40396
Can#: 88627-36049
Date : 12/11/12 15:36
Data File: i121114sim.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	95.00	% Recovery
Toluene-d8	2037-26-5	104.00	% Recovery
4-Bromofluorobenzene	460-00-4	102.00	% Recovery

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Media Certification Report

Canister Number: 6L#35241 w/24hr#40522
Can#: 88627-35241
Date : 12/11/12 13:45
Data File: i121111sim.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	97.00	% Recovery
Toluene-d8	2037-26-5	103.00	% Recovery
4-Bromofluorobenzene	460-00-4	102.00	% Recovery

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www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L#33542 w/24hr#20412
Can#: 88627-33542
Date : 12/11/12 14:59
Data File: i121113sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	101.00	% Recovery
Toluene-d8	2037-26-5	104.00	% Recovery
4-Bromofluorobenzene	460-00-4	105.00	% Recovery

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Media Certification Report

Canister Number: 6L#34438 w/9.2ml#FC00248
Can#: 89431-34438
Date : 01/24/13 19:14
Data File: 9012417sim.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	101.00	% Recovery
Toluene-d8	2037-26-5	99.00	% Recovery
4-Bromofluorobenzene	460-00-4	102.00	% Recovery

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Media Certification Report

Canister Number: 6L#34420 w/9.2ml#FC00485
Can#: 89431-34420
Date : 01/24/13 21:46
Data File: 9012421sim.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	100.00	% Recovery
Toluene-d8	2037-26-5	100.00	% Recovery
4-Bromofluorobenzene	460-00-4	104.00	% Recovery

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www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L#34199 w/9.2ml#FC00216
Can#: 89431-34199
Date : 01/25/13 0:18
Data File: 9012425sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	97.00	% Recovery
Toluene-d8	2037-26-5	100.00	% Recovery
4-Bromofluorobenzene	460-00-4	103.00	% Recovery

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Media Certification Report

Canister Number: 250mL #33883
Can#: 89431-33883
Date : 01/24/13 16:52
Data File: c012408.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Styrene	100-42-5	ND	ppbv
alpha-Chlorotoluene	100-44-7	ND	ppbv
cis-1,3-Dichloropropene	10061-01-5	ND	ppbv
trans-1,3-Dichloropropene	10061-02-6	ND	ppbv
Propylbenzene	103-65-1	ND	ppbv
1,4-Dichlorobenzene	106-46-7	ND	ppbv
1,2-Dibromoethane (EDB)	106-93-4	ND	ppbv
1,3-Butadiene	106-99-0	ND	ppbv
3-Chloropropene	107-05-1	ND	ppbv
4-Methyl-2-pentanone	108-10-1	ND	ppbv
1,3,5-Trimethylbenzene	108-67-8	ND	ppbv
Chlorobenzene	108-90-7	ND	ppbv
Tetrahydrofuran	109-99-9	ND	ppbv
Hexane	110-54-3	ND	ppbv
Cyclohexane	110-82-7	ND	ppbv
1,2,4-Trichlorobenzene	120-82-1	ND	ppbv
1,4-Dioxane	123-91-1	ND	ppbv
Dibromochloromethane	124-48-1	ND	ppbv
Heptane	142-82-5	ND	ppbv
2,2,4-Trimethylpentane	540-84-1	ND	ppbv
1,3-Dichlorobenzene	541-73-1	ND	ppbv
Carbon Tetrachloride	56-23-5	ND	ppbv
2-Hexanone	591-78-6	ND	ppbv
4-Ethyltoluene	622-96-8	ND	ppbv
Ethanol	64-17-5	ND	ppbv
2-Propanol	67-63-0	ND	ppbv
Acetone	67-64-1	ND	ppbv
Chloroform	67-66-3	ND	ppbv
Bromomethane	74-83-9	ND	ppbv
Chloromethane	74-87-3	ND	ppbv
Chloroethane	75-00-3	ND	ppbv
Methylene Chloride	75-09-2	ND	ppbv
Carbon Disulfide	75-15-0	ND	ppbv
Bromoform	75-25-2	ND	ppbv
Bromodichloromethane	75-27-4	ND	ppbv
Freon 11	75-69-4	ND	ppbv
Freon 12	75-71-8	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Freon 114	76-14-2	ND	ppbv
1,2-Dichloropropane	78-87-5	ND	ppbv
2-Butanone (Methyl Ethyl	78-93-3	ND	ppbv
Hexachlorobutadiene	87-68-3	ND	ppbv
1,2-Dichlorobenzene	95-50-1	ND	ppbv

Name	CAS	Conc.	Units
1,2,4-Trimethylbenzene	95-63-6	ND	ppbv
Cumene	98-82-8	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	96.00	% Recovery
Toluene-d8	2037-26-5	98.00	% Recovery
4-Bromofluorobenzene	460-00-4	96.00	% Recovery

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Media Certification Report

Canister Number: 250mL #33883
Can#: 89431-33883a
Date : 01/24/13 16:52
Data File: c012408sim.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Ethyl Benzene	100-41-4	ND	ppbv
1,2-Dichloroethane	107-06-2	ND	ppbv
m,p-Xylene	108-38-3	ND	ppbv
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Methyl tert-butyl ether	1634-04-4	ND	ppbv
Benzene	71-43-2	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
1,1,2-Trichloroethane	79-00-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,1,2,2-Tetrachloroethane	79-34-5	ND	ppbv
o-Xylene	95-47-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	101.00	% Recovery
Toluene-d8	2037-26-5	100.00	% Recovery
4-Bromofluorobenzene	460-00-4	100.00	% Recovery

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Media Certification Report

Canister Number: 6L# 33680 w/9.2mL# FC00285
Can#: 89431-33680
Date : 01/25/13 14:36
Data File: 9012512sim.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Ethyl Benzene	100-41-4	ND	ppbv
Styrene	100-42-5	ND	ppbv
alpha-Chlorotoluene	100-44-7	ND	ppbv
cis-1,3-Dichloropropene	10061-01-5	ND	ppbv
trans-1,3-Dichloropropene	10061-02-6	ND	ppbv
Propylbenzene	103-65-1	ND	ppbv
1,4-Dichlorobenzene	106-46-7	ND	ppbv
1,2-Dibromoethane (EDB)	106-93-4	ND	ppbv
1,3-Butadiene	106-99-0	ND	ppbv
3-Chloropropene	107-05-1	ND	ppbv
1,2-Dichloroethane	107-06-2	ND	ppbv
4-Methyl-2-pentanone	108-10-1	ND	ppbv
m,p-Xylene	108-38-3	ND	ppbv
1,3,5-Trimethylbenzene	108-67-8	ND	ppbv
Toluene	108-88-3	ND	ppbv
Chlorobenzene	108-90-7	ND	ppbv
Tetrahydrofuran	109-99-9	ND	ppbv
Hexane	110-54-3	ND	ppbv
Cyclohexane	110-82-7	ND	ppbv
1,2,4-Trichlorobenzene	120-82-1	ND	ppbv
1,4-Dioxane	123-91-1	ND	ppbv
Dibromochloromethane	124-48-1	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
Heptane	142-82-5	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Methyl tert-butyl ether	1634-04-4	ND	ppbv
2,2,4-Trimethylpentane	540-84-1	ND	ppbv
1,3-Dichlorobenzene	541-73-1	ND	ppbv
Carbon Tetrachloride	56-23-5	ND	ppbv
2-Hexanone	591-78-6	ND	ppbv
4-Ethyltoluene	622-96-8	ND	ppbv
Ethanol	64-17-5	ND	ppbv
2-Propanol	67-63-0	ND	ppbv
Acetone	67-64-1	ND	ppbv
Chloroform	67-66-3	ND	ppbv
Benzene	71-43-2	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Bromomethane	74-83-9	ND	ppbv
Chloromethane	74-87-3	ND	ppbv
Chloroethane	75-00-3	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
Methylene Chloride	75-09-2	ND	ppbv

Name	CAS	Conc.	Units
Carbon Disulfide	75-15-0	ND	ppbv
Bromoform	75-25-2	ND	ppbv
Bromodichloromethane	75-27-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 11	75-69-4	ND	ppbv
Freon 12	75-71-8	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Freon 114	76-14-2	ND	ppbv
1,2-Dichloropropane	78-87-5	ND	ppbv
2-Butanone (Methyl Ethyl	78-93-3	ND	ppbv
1,1,2-Trichloroethane	79-00-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,1,2,2-Tetrachloroethane	79-34-5	ND	ppbv
Hexachlorobutadiene	87-68-3	ND	ppbv
Naphthalene	91-20-3	ND	ppbv
o-Xylene	95-47-6	ND	ppbv
1,2-Dichlorobenzene	95-50-1	ND	ppbv
1,2,4-Trimethylbenzene	95-63-6	ND	ppbv
Cumene	98-82-8	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	100.00	% Recovery
Toluene-d8	2037-26-5	100.00	% Recovery
4-Bromofluorobenzene	460-00-4	103.00	% Recovery

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Media Certification Report

Canister Number: 6L# 33547 w/9.2mL# FC00285
Can#: 89431-33547
Date : 01/25/13 15:14
Data File: 9012513sim.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Ethyl Benzene	100-41-4	ND	ppbv
Styrene	100-42-5	ND	ppbv
alpha-Chlorotoluene	100-44-7	ND	ppbv
cis-1,3-Dichloropropene	10061-01-5	ND	ppbv
trans-1,3-Dichloropropene	10061-02-6	ND	ppbv
Propylbenzene	103-65-1	ND	ppbv
1,4-Dichlorobenzene	106-46-7	ND	ppbv
1,2-Dibromoethane (EDB)	106-93-4	ND	ppbv
1,3-Butadiene	106-99-0	ND	ppbv
3-Chloropropene	107-05-1	ND	ppbv
1,2-Dichloroethane	107-06-2	ND	ppbv
4-Methyl-2-pentanone	108-10-1	ND	ppbv
m,p-Xylene	108-38-3	ND	ppbv
1,3,5-Trimethylbenzene	108-67-8	ND	ppbv
Toluene	108-88-3	ND	ppbv
Chlorobenzene	108-90-7	ND	ppbv
Tetrahydrofuran	109-99-9	ND	ppbv
Hexane	110-54-3	ND	ppbv
Cyclohexane	110-82-7	ND	ppbv
1,2,4-Trichlorobenzene	120-82-1	ND	ppbv
1,4-Dioxane	123-91-1	ND	ppbv
Dibromochloromethane	124-48-1	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
Heptane	142-82-5	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Methyl tert-butyl ether	1634-04-4	ND	ppbv
2,2,4-Trimethylpentane	540-84-1	ND	ppbv
1,3-Dichlorobenzene	541-73-1	ND	ppbv
Carbon Tetrachloride	56-23-5	ND	ppbv
2-Hexanone	591-78-6	ND	ppbv
4-Ethyltoluene	622-96-8	ND	ppbv
Ethanol	64-17-5	ND	ppbv
2-Propanol	67-63-0	ND	ppbv
Acetone	67-64-1	ND	ppbv
Chloroform	67-66-3	ND	ppbv
Benzene	71-43-2	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Bromomethane	74-83-9	ND	ppbv
Chloromethane	74-87-3	ND	ppbv
Chloroethane	75-00-3	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
Methylene Chloride	75-09-2	ND	ppbv

Name	CAS	Conc.	Units
Carbon Disulfide	75-15-0	ND	ppbv
Bromoform	75-25-2	ND	ppbv
Bromodichloromethane	75-27-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 11	75-69-4	ND	ppbv
Freon 12	75-71-8	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Freon 114	76-14-2	ND	ppbv
1,2-Dichloropropane	78-87-5	ND	ppbv
2-Butanone (Methyl Ethyl	78-93-3	ND	ppbv
1,1,2-Trichloroethane	79-00-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,1,2,2-Tetrachloroethane	79-34-5	ND	ppbv
Hexachlorobutadiene	87-68-3	ND	ppbv
Naphthalene	91-20-3	ND	ppbv
o-Xylene	95-47-6	ND	ppbv
1,2-Dichlorobenzene	95-50-1	ND	ppbv
1,2,4-Trimethylbenzene	95-63-6	ND	ppbv
Cumene	98-82-8	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	97.00	% Recovery
Toluene-d8	2037-26-5	101.00	% Recovery
4-Bromofluorobenzene	460-00-4	101.00	% Recovery

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Media Certification Report

Canister Number: 250ml #13676 w/9.2mL#FC00288
Can#: 89431-13676
Date : 01/25/13 14:35
Data File: c012507.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Styrene	100-42-5	ND	ppbv
alpha-Chlorotoluene	100-44-7	ND	ppbv
cis-1,3-Dichloropropene	10061-01-5	ND	ppbv
trans-1,3-Dichloropropene	10061-02-6	ND	ppbv
Propylbenzene	103-65-1	ND	ppbv
1,4-Dichlorobenzene	106-46-7	ND	ppbv
1,2-Dibromoethane (EDB)	106-93-4	ND	ppbv
1,3-Butadiene	106-99-0	ND	ppbv
3-Chloropropene	107-05-1	ND	ppbv
4-Methyl-2-pentanone	108-10-1	ND	ppbv
1,3,5-Trimethylbenzene	108-67-8	ND	ppbv
Chlorobenzene	108-90-7	ND	ppbv
Tetrahydrofuran	109-99-9	ND	ppbv
Hexane	110-54-3	ND	ppbv
Cyclohexane	110-82-7	ND	ppbv
1,2,4-Trichlorobenzene	120-82-1	ND	ppbv
1,4-Dioxane	123-91-1	ND	ppbv
Dibromochloromethane	124-48-1	ND	ppbv
Heptane	142-82-5	ND	ppbv
2,2,4-Trimethylpentane	540-84-1	ND	ppbv
1,3-Dichlorobenzene	541-73-1	ND	ppbv
Carbon Tetrachloride	56-23-5	ND	ppbv
2-Hexanone	591-78-6	ND	ppbv
4-Ethyltoluene	622-96-8	ND	ppbv
Ethanol	64-17-5	ND	ppbv
2-Propanol	67-63-0	ND	ppbv
Acetone	67-64-1	ND	ppbv
Chloroform	67-66-3	ND	ppbv
Bromomethane	74-83-9	ND	ppbv
Chloromethane	74-87-3	ND	ppbv
Chloroethane	75-00-3	ND	ppbv
Carbon Disulfide	75-15-0	ND	ppbv
Bromoform	75-25-2	ND	ppbv
Bromodichloromethane	75-27-4	ND	ppbv
Freon 11	75-69-4	ND	ppbv
Freon 12	75-71-8	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Freon 114	76-14-2	ND	ppbv
1,2-Dichloropropane	78-87-5	ND	ppbv
2-Butanone (Methyl Ethyl	78-93-3	ND	ppbv
Hexachlorobutadiene	87-68-3	ND	ppbv
1,2-Dichlorobenzene	95-50-1	ND	ppbv
1,2,4-Trimethylbenzene	95-63-6	ND	ppbv

Name	CAS	Conc.	Units
Cumene	98-82-8	ND	ppbv
Methylene Chloride	75-09-2	0.27	ppbv
1,2-Dichloroethane-d4	17060-07-0	106.00	% Recovery
Toluene-d8	2037-26-5	98.00	% Recovery
4-Bromofluorobenzene	460-00-4	96.00	% Recovery

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Media Certification Report

Canister Number: 250ml #13676 w/9.2mL#FC00288
Can#: 89431-13676a
Date : 01/25/13 14:35
Data File: c012507sim.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Ethyl Benzene	100-41-4	ND	ppbv
1,2-Dichloroethane	107-06-2	ND	ppbv
m,p-Xylene	108-38-3	ND	ppbv
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Methyl tert-butyl ether	1634-04-4	ND	ppbv
Benzene	71-43-2	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
1,1,2-Trichloroethane	79-00-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,1,2,2-Tetrachloroethane	79-34-5	ND	ppbv
o-Xylene	95-47-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	102.00	% Recovery
Toluene-d8	2037-26-5	99.00	% Recovery
4-Bromofluorobenzene	460-00-4	93.00	% Recovery

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Media Certification Report

Canister Number: 250mL #12085
Can#: 89431-12085
Date : 01/24/13 16:17
Data File: c012407.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Styrene	100-42-5	ND	ppbv
alpha-Chlorotoluene	100-44-7	ND	ppbv
cis-1,3-Dichloropropene	10061-01-5	ND	ppbv
trans-1,3-Dichloropropene	10061-02-6	ND	ppbv
Propylbenzene	103-65-1	ND	ppbv
1,4-Dichlorobenzene	106-46-7	ND	ppbv
1,2-Dibromoethane (EDB)	106-93-4	ND	ppbv
1,3-Butadiene	106-99-0	ND	ppbv
3-Chloropropene	107-05-1	ND	ppbv
4-Methyl-2-pentanone	108-10-1	ND	ppbv
1,3,5-Trimethylbenzene	108-67-8	ND	ppbv
Chlorobenzene	108-90-7	ND	ppbv
Tetrahydrofuran	109-99-9	ND	ppbv
Hexane	110-54-3	ND	ppbv
Cyclohexane	110-82-7	ND	ppbv
1,2,4-Trichlorobenzene	120-82-1	ND	ppbv
1,4-Dioxane	123-91-1	ND	ppbv
Dibromochloromethane	124-48-1	ND	ppbv
Heptane	142-82-5	ND	ppbv
2,2,4-Trimethylpentane	540-84-1	ND	ppbv
1,3-Dichlorobenzene	541-73-1	ND	ppbv
Carbon Tetrachloride	56-23-5	ND	ppbv
2-Hexanone	591-78-6	ND	ppbv
4-Ethyltoluene	622-96-8	ND	ppbv
Ethanol	64-17-5	ND	ppbv
2-Propanol	67-63-0	ND	ppbv
Acetone	67-64-1	ND	ppbv
Chloroform	67-66-3	ND	ppbv
Bromomethane	74-83-9	ND	ppbv
Chloromethane	74-87-3	ND	ppbv
Chloroethane	75-00-3	ND	ppbv
Methylene Chloride	75-09-2	ND	ppbv
Carbon Disulfide	75-15-0	ND	ppbv
Bromoform	75-25-2	ND	ppbv
Bromodichloromethane	75-27-4	ND	ppbv
Freon 11	75-69-4	ND	ppbv
Freon 12	75-71-8	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Freon 114	76-14-2	ND	ppbv
1,2-Dichloropropane	78-87-5	ND	ppbv
2-Butanone (Methyl Ethyl	78-93-3	ND	ppbv
Hexachlorobutadiene	87-68-3	ND	ppbv
1,2-Dichlorobenzene	95-50-1	ND	ppbv

Name	CAS	Conc.	Units
1,2,4-Trimethylbenzene	95-63-6	ND	ppbv
Cumene	98-82-8	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	97.00	% Recovery
Toluene-d8	2037-26-5	98.00	% Recovery
4-Bromofluorobenzene	460-00-4	108.00	% Recovery

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Media Certification Report

Canister Number: 250mL #12085
Can#: 89431-12085a
Date : 01/24/13 16:17
Data File: c012407sim.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Ethyl Benzene	100-41-4	ND	ppbv
1,2-Dichloroethane	107-06-2	ND	ppbv
m,p-Xylene	108-38-3	ND	ppbv
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Methyl tert-butyl ether	1634-04-4	ND	ppbv
Benzene	71-43-2	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
1,1,2-Trichloroethane	79-00-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,1,2,2-Tetrachloroethane	79-34-5	ND	ppbv
o-Xylene	95-47-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	101.00	% Recovery
Toluene-d8	2037-26-5	101.00	% Recovery
4-Bromofluorobenzene	460-00-4	106.00	% Recovery

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Media Certification Report

Canister Number: 6L# 12071 w/9.2mL#FC00665
Can#: 89431-12071
Date : 01/25/13 16:30
Data File: 9012515sim.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Ethyl Benzene	100-41-4	ND	ppbv
Styrene	100-42-5	ND	ppbv
alpha-Chlorotoluene	100-44-7	ND	ppbv
cis-1,3-Dichloropropene	10061-01-5	ND	ppbv
trans-1,3-Dichloropropene	10061-02-6	ND	ppbv
Propylbenzene	103-65-1	ND	ppbv
1,4-Dichlorobenzene	106-46-7	ND	ppbv
1,2-Dibromoethane (EDB)	106-93-4	ND	ppbv
1,3-Butadiene	106-99-0	ND	ppbv
3-Chloropropene	107-05-1	ND	ppbv
1,2-Dichloroethane	107-06-2	ND	ppbv
4-Methyl-2-pentanone	108-10-1	ND	ppbv
m,p-Xylene	108-38-3	ND	ppbv
1,3,5-Trimethylbenzene	108-67-8	ND	ppbv
Toluene	108-88-3	ND	ppbv
Chlorobenzene	108-90-7	ND	ppbv
Tetrahydrofuran	109-99-9	ND	ppbv
Hexane	110-54-3	ND	ppbv
Cyclohexane	110-82-7	ND	ppbv
1,2,4-Trichlorobenzene	120-82-1	ND	ppbv
1,4-Dioxane	123-91-1	ND	ppbv
Dibromochloromethane	124-48-1	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
Heptane	142-82-5	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Methyl tert-butyl ether	1634-04-4	ND	ppbv
2,2,4-Trimethylpentane	540-84-1	ND	ppbv
1,3-Dichlorobenzene	541-73-1	ND	ppbv
Carbon Tetrachloride	56-23-5	ND	ppbv
2-Hexanone	591-78-6	ND	ppbv
4-Ethyltoluene	622-96-8	ND	ppbv
Ethanol	64-17-5	ND	ppbv
2-Propanol	67-63-0	ND	ppbv
Acetone	67-64-1	ND	ppbv
Chloroform	67-66-3	ND	ppbv
Benzene	71-43-2	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Bromomethane	74-83-9	ND	ppbv
Chloromethane	74-87-3	ND	ppbv
Chloroethane	75-00-3	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
Methylene Chloride	75-09-2	ND	ppbv

Name	CAS	Conc.	Units
Carbon Disulfide	75-15-0	ND	ppbv
Bromoform	75-25-2	ND	ppbv
Bromodichloromethane	75-27-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 11	75-69-4	ND	ppbv
Freon 12	75-71-8	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Freon 114	76-14-2	ND	ppbv
1,2-Dichloropropane	78-87-5	ND	ppbv
2-Butanone (Methyl Ethyl	78-93-3	ND	ppbv
1,1,2-Trichloroethane	79-00-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,1,2,2-Tetrachloroethane	79-34-5	ND	ppbv
Hexachlorobutadiene	87-68-3	ND	ppbv
Naphthalene	91-20-3	ND	ppbv
o-Xylene	95-47-6	ND	ppbv
1,2-Dichlorobenzene	95-50-1	ND	ppbv
1,2,4-Trimethylbenzene	95-63-6	ND	ppbv
Cumene	98-82-8	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	97.00	% Recovery
Toluene-d8	2037-26-5	99.00	% Recovery
4-Bromofluorobenzene	460-00-4	100.00	% Recovery

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www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L#5752 w/9.2ml#40820
Can#: 89431-5752
Date : 01/25/13 0:56
Data File: 9012426sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	96.00	% Recovery
Toluene-d8	2037-26-5	99.00	% Recovery
4-Bromofluorobenzene	460-00-4	100.00	% Recovery

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www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L#4342 w/9.2ml#FC00471
Can#: 89431-4342
Date : 01/24/13 20:30
Data File: 9012419sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	99.00	% Recovery
Toluene-d8	2037-26-5	102.00	% Recovery
4-Bromofluorobenzene	460-00-4	104.00	% Recovery

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www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L#3741 w/9.2ml#FC00800
Can#: 89431-3741
Date : 01/25/13 1:34
Data File: 9012427sim.d

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	98.00	% Recovery
Toluene-d8	2037-26-5	99.00	% Recovery
4-Bromofluorobenzene	460-00-4	100.00	% Recovery

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Media Certification Report

Canister Number: 6L#35995 w/9.2ml#FC00778
Can#: 89431-35995
Date : 01/24/13 23:02
Data File: 9012423sim.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
Toluene	108-88-3	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Chloroform	67-66-3	ND	ppbv
1,1,1-Trichloroethane	71-55-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
1,1-Dichloroethane	75-34-3	ND	ppbv
1,1-Dichloroethene	75-35-4	ND	ppbv
Freon 113	76-13-1	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0	97.00	% Recovery
Toluene-d8	2037-26-5	99.00	% Recovery
4-Bromofluorobenzene	460-00-4	102.00	% Recovery

APPENDIX C

Photographs from Commercial Study

APPENDIX C

PHOTOGRAPHS FROM COMMERICAL STUDY
Intersil/Siemens Site
Indoor Air Study Area
Cupertino, California

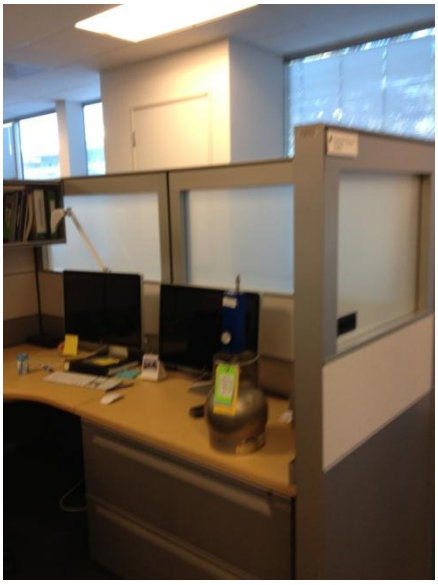
Sample OA1

Sample OA2

APPENDIX C

PHOTOGRAPHS FROM COMMERICAL STUDY
Intersil/Siemens Site
Indoor Air Study Area
Cupertino, California

Sample IA1



Sample IA2

APPENDIX C

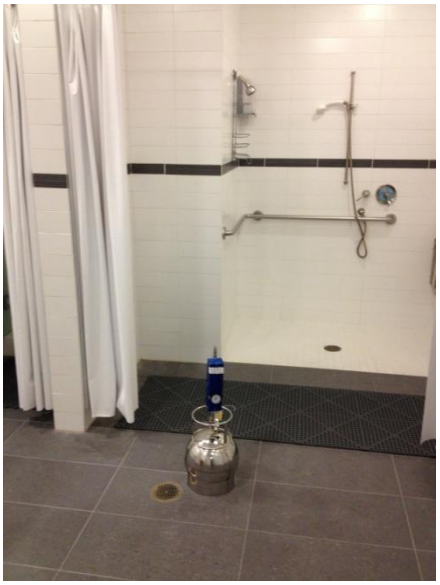
PHOTOGRAPHS FROM COMMERICAL STUDY
Intersil/Siemens Site
Indoor Air Study Area
Cupertino, California

Sample IA3

Sample IA4

APPENDIX C

PHOTOGRAPHS FROM COMMERICAL STUDY
Intersil/Siemens Site
Indoor Air Study Area
Cupertino, California



Sample IA5

Sample IA6

APPENDIX C

PHOTOGRAPHS FROM COMMERICAL STUDY
Intersil/Siemens Site
Indoor Air Study Area
Cupertino, California

Sample IA7

Sample IA8

APPENDIX C

PHOTOGRAPHS FROM COMMERICAL STUDY
Intersil/Siemens Site
Indoor Air Study Area
Cupertino, California

Sample IA9

APPENDIX D

Field Forms

AIR SAMPLING LOG

Project Name: Intosil/Siemens off-site res. **Project Number:** OD11161051

Start Date: 7/19/12 **Building IDs:** RB1 – RB6

FIRST DAY OF SAMPLING

Sampler Name:	Avery Patton	**Weather:**	Sunny
Temperature:	~75°	**Barometric Pressure:**	
Notes:			

SECOND DAY OF SAMPLING

Sampler Name:	Avery Patton	**Weather:**	
Temperature:	75°	**Barometric Pressure:**	
Notes:			

ATD (SI)

Sample ID	Sample Type	Building ID	Summa Canister ID	Flow Controller ID	Sampling Start			Sampling End			Photo
					Start Canister Vacuum	Start Time	Start Date	End Canister Vacuum	End Time	End Date	
RB1-OA1-20120720	OA	1	34006	40114	-30	1005	7/19/12	-8	0932	7/20/12	1
RB1-IA1-20120720	IA	1	32114	40325	-30	1015	↓	-10	0934	↓	2
RB1-IA2-20120720	↓	1	34754	40042	-30	1017	↓	-7	0935	↓	3
RB1-CS1-20120720	↓	1	33583	40620	-30	1019	↓	-8	0937	↓	4
RB2-IA1-20120720	↓	2	12048	40107	-30	1049	↓	-10	1003	↓	5

AIR SAMPLING LOG

Project Name: Intersil/Siemens off-site residential **Project Number:** OD1116105 7

Start Date: 7/19/12 **Building IDs:** RB1-RB6

	Sample ID	Sample Type	Building ID	Summa Canister ID	Flow Controller ID	Sampling Start			Sampling End			photo
						Start Canister Vacuum	Start Time	Start Date	End Canister Vacuum	End Time	End Date	
RB2-IA2	20120720	IA	2	24174	40624	-30	1052	7/19/12	-9	1007	7/20/12	6
RB2-CS1	20120720	CS	2	34344	40061	-30	1054		-10	1009		7
RB3-IA1	20120720	IA	3	33577	6443	-30	1119		-11	1024		8
RB3-IA2	20120720	IA	3	10782	40450	-30	1118		-16	1025		9
RB4-OA1	20120720	OA	4	33863	40482	-30	1621		-7	1634		10
RB4-IA1	20120720	IA	4	22107	100295	-29.5	1620		-7	1635		11
RB4-IA2	20120720	IA	4	409	40432	-30	1624		-9	1638		12
* RB4-IA3	20120720	IA dup	4	9410	40437	-29.5	1620 (1621)		-7	1635 (1636)		(11)
RB4-CS1	20120720	CS	4	5641	40768	-30	1627		-8	1639		13
RB5-IA1	20120720	IA	5	944	40601	-30	1658		-11	1702		14
RB5-IA2	20120720	IA	5	33991	40591	-30	1702		-7	1703		15
RB5-CS1	20120720	CS	5	12670	40602	-30	1706		-8	1705		16
RB6-IA1	20120720	IA	6	5478	40548	-29.5	1723		-5	1824		17
RB6-IA2	20120720	IA	6	5596	40443	-30	1727		-8	1826		18

* dup of IA-1

AIR SAMPLING LOG

Project Name: Intersil-Siemens off-site residential **Project Number:** 0D1116257

Start Date: 7/19/12 **Building IDs:** RB1-RB6

Sample ID	Sample Type	Building ID	Summa Canister ID	Flow Controller ID	Sampling Start			Sampling End			
					Start Canister Vacuum	Start Time	Start Date	End Canister Vacuum	End Time	End Date	
* RB6-IA3 20120720	IA DUP	6	5605	6331	-30	1723	7/19	-6	1825	7/20/12	(17)

* DUP of RB6-IA1

AIR SAMPLING LOG

Project Name: Intersil-Siemens Off-site Residential Sampling **Project Number:** OD11161051.11C

Start Date: January 22-23, 2013 **Building IDs:** RB-7

FIRST DAY OF SAMPLING

Sampler Name:	Avery Patton	**Weather:**	Sunny
Temperature:	60°	**Barometric Pressure:**	
Notes:			

SECOND DAY OF SAMPLING

Sampler Name:	Avery Patton	**Weather:**	cloudy
Temperature:	55°	**Barometric Pressure:**	
Notes:			

Sample ID	Sample Type	Building ID	Summa Canister ID	Flow Controller ID	Sampling Start			Sampling End		
					Start Canister Vacuum	Start Time	Start Date	End Canister Vacuum	End Time	End Date
RB7-OA1-20130123	Ambient	RB7	35241	40522	-30	1140	1/22	-7.5	1052	1/23
RB7-IA1-20130123	Indoor	RB7	36049	40396	-30	1152	1/22	-6	1056	1/23
RB7-IA2-20130123	Indoor	RB7	4350	40634	-27	1155	1/22	-2	1057	1/23
RB7-IA3-20130123	Indoor dup	RB7	34306	40175	-30	1152	1/22	-7	1056	1/23
RB7-CS1-20130123	Crawl Space	RB7	33542	20412	-30	1148	1/22	-8	1055	1/23

dup of IA1

amec

INDOOR AIR SAMPLING FORM—SUMMA CANISTERS

Project and Task No.: OD11161051.12G
Project Name: Intersil-Siemens Off-site Commercial Sampling
Project Address: Cupertino, CA

Sampled by: Avery Patton
Date: January 27, 2013
Weather: Sunny, 45°-60°

Sample ID	Date	Sample Type (indoor or ambient)	Summa Canister ID	Flow Controller ID	Analysis	Start Sampling		End Sampling		Photo
						Time	Canister Vacuum	Time	Canister Vacuum	
AMI-OA1-20130127	1/27/2013	Ambient	13676	FC00288	TO-15 SIM	0804	-30	1832	-7	01
AMI-OA2-20130127	1/27/2013	Ambient	12071	FC00665	TO-15 SIM	0839	-30	1910	-6	10
AMI-IA1-20130127	1/27/2013	Indoor (BZ)	33547	FC00285	TO-15 SIM	0850	-30	1913	-8	04
AMI-IA2-20130127	1/27/2013	Indoor (BZ)	33833	FC00756	TO-15 SIM	0852	-30	1842	-7	05
AMI-IA3-20130127	1/27/2013	Indoor (BZ)	35795	FC00778	TO-15 SIM	0855	-30	1841	-9	03
AMI-IA4-20130127	1/27/2013	Indoor (BZ)	34199	FC00216	TO-15 SIM	0900	-29	1845	-8	06
AMI-IA5-20130127	1/27/2013	Indoor (PP)	3741	40800	TO-15 SIM	0904	-30	1848	-7	07
AMI-IA6-20130127	1/27/2013	Indoor (PP)	4342	FC00471	TO-15 SIM	0906	-30	1850	-9	08
AMI-IA7-20130127	1/27/2013	Indoor (BZ)	5752	40820	TO-15 SIM	0907	-30	1855	-8	09
AMI-IA8-20130127	1/27/2013	Indoor (BZ)	34438	FC00248	TO-15 SIM	0845	-30	1853	-7	02
AMI-IA9-20130127	1/27/2013	Dup of IA4	33680	FC00534	TO-15 SIM	0900	-30	1845	-7	06
								(false time 1945)		

Tubing volume/linear foot (in cc) calculated by: 95.76 x [tubing diameter (in cm)/2]^2

APPENDIX E

Laboratory Reports and Chain of Custody Records

(Provided in Separate File)

APPENDIX F

Data Quality Review

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APPENDIX F
DATA QUALITY REVIEW
Intersil/Siemens Site
Indoor Air Study Area
Cupertino, California

1.0 INTRODUCTION

AMEC Environment & Infrastructure, Inc. (AMEC) collected 36 air samples (including 4 blind field duplicates) between July 20, 2012 and January 1, 2013 from the Intersil/Siemens Indoor Air Study Area, which is in the Off-Site Study Area of the Intersil/Siemens Superfund Site in Cupertino, California. AMEC submitted the samples to Eurofins Air Toxics, Inc. (Air Toxics), located in Folsom, California, where they were assigned to sample delivery groups (SDGs) 1207474, 1207475, 1301413, and 1301507. Air Toxics analyzed the samples for volatile organic compounds (VOCs) by modified United States Environmental Protection Agency (EPA) Method TO-15 using Full Scan and Selective Ion Monitoring acquisition modes. A list of these samples by field sample identification (ID) and Air Toxics sample ID is presented in the following table.

Table 1. Field Samples Submitted to Eurofins Air Toxics, Inc. with Corresponding Laboratory IDs

Field Sample ID	Collection Date	Air Toxics Sample ID	Notes
RB1-OA1-20120720	7/20/2012	1207474-01	
RB1-IA1-20120720	7/20/2012	1207474-02	
RB1-IA2-20120720	7/20/2012	1207474-03	
RB1-CS1-20120720	7/20/2012	1207474-04	
RB2-IA1-20120720	7/20/2012	1207474-05	
RB2-IA2-20120720	7/20/2012	1207474-06	
RB2-CS1-20120720	7/20/2012	1207474-07	
RB3-IA1-20120720	7/20/2012	1207474-08	
RB3-IA2-20120720	7/20/2012	1207474-09	
RB4-OA1-20120720	7/20/2012	1207474-10	
RB4-IA1-20120720	7/20/2012	1207475-01	
RB4-IA2-20120720	7/20/2012	1207475-02	
RB4-IA3-20120720	7/20/2012	1207475-03	Field duplicate of RB4-IA1-20120720
RB4-CS1-20120720	7/20/2012	1207475-04	
RB5-IA1-20120720	7/20/2012	1207475-05	
RB5-IA2-20120720	7/20/2012	1207475-06	
RB5-CS1-20120720	7/20/2012	1207475-07	
RB6-IA1-20120720	7/20/2012	1207475-08	
RB6-IA2-20120720	7/20/2012	1207475-09	
RB6-IA3-20120720	7/20/2012	1207475-10	Field duplicate of RB6-IA1-20120720
RB7-OA1-20130123	1/23/2013	1301413-01	
RB7-IA1-20130123	1/23/2013	1301413-02	
RB7-IA2-20130123	1/23/2013	1301413-03	

Field Sample ID	Collection Date	Air Toxics Sample ID	Notes
RB7-IA3-20130123	1/23/2013	1301413-04	Field duplicate of RB7-IA1-20130123
RB7-CS1-20130123	1/23/2013	1301413-05	
AMI-OA1-20130127	1/27/2013	1301507-01	
AMI-OA2-20130127	1/27/2013	1301507-02	
AMI-IA1-20130127	1/27/2013	1301507-03	
AMI-IA2-20130127	1/27/2013	1301507-04	
AMI-IA3-20130127	1/27/2013	1301507-05	
AMI-IA4-20130127	1/27/2013	1301507-06	
AMI-IA5-20130127	1/27/2013	1301507-07	
AMI-IA6-20130127	1/27/2013	1301507-08	
AMI-IA7-20130127	1/27/2013	1301507-09	
AMI-IA8-20130127	1/27/2013	1301507-10	
AMI-IA9-20130127	1/27/2013	1301507-11	Field duplicate of AMI-IA4-20130127

2.0 DATA QUALITY REVIEW AND VALIDATION METHODOLOGY

In accordance with the QAPP, AMEC performed a Region 9 Tier 3 validation on 20% of the field samples. Samples RB7-OA1-20130123 and RB7-IA1-20130123 were selected from SDG 1301413 and samples AMI-OA1-20130127, AMI-OA2-20130127, AMI-IA4-20130127, AMI-IA5-20130127, and AMI-IA9-20130127 were selected from SDG 1301507. The remaining samples underwent a Region 9 Tier 2 data quality review to evaluate the usability of the data. This data quality review and validation has been performed in general accordance with the following:

- EPA, 2001, U.S. Environmental Protection Agency (EPA) Region 9 Superfund Data Evaluation/Validation Guidance, Version 1, R9QA/006.1, December, 2001.
- EPA, 2002, EPA Guidance for Quality Assurance Project Plans, EPA/240/R-02/009, Office of Environmental Information, December.
- EPA, 2008, EPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, EPA/540-R-08-01, June.
- AMEC, 2012, AMEC Environment & Infrastructure, Inc., 2012a, Work Plan to Evaluate Potential Vapor Intrusion, Intersil/Siemens Site, Indoor Air Study Area, Cupertino, California, February 12.

The CLP guidelines listed above were written specifically for the CLP, and have been modified for the purposes of this data review where they differ from method-specific quality control (QC) requirements.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

- Data package and electronic data deliverable completeness;
- Chain of custody compliance;
- Holding time compliance;
- Presence or absence of laboratory contamination as demonstrated by method blanks;

- Accuracy and bias as demonstrated by recovery of surrogate spikes, laboratory control samples (LCSs), and internal standard (IS) recoveries;
- Analytical precision as relative percent difference (RPD) of analyte concentration between laboratory duplicates;
- Sampling and analytical precision as RPD of analyte concentration between field duplicates; and
- Insofar as possible, the degree of conformance to method requirements and good laboratory practices.

In general, it is important to recognize that no analytical data are guaranteed to be correct, even if all QC audits are passed. Strict QC serves to increase confidence in data, but any reported value may potentially contain error.

3.0 EXPLANATION OF DATA QUALITY INDICATORS

Summary explanations of the specific data quality indicators reviewed during this data quality review are presented in the following sections.

3.1 LABORATORY CONTROL SAMPLE RECOVERIES

LCSs are aliquots of analyte-free matrices that are spiked with the analytes of interest for an analytical method, or a representative subset of those analytes. The spiked matrix is then processed through the same analytical procedures as the samples they accompany. LCS recovery is an indication of a laboratory's ability to successfully perform an analytical method in an interference-free matrix.

3.2 MATRIX SPIKE RECOVERIES

Matrix spikes (MSs) and MS duplicates (MSDs) are prepared by adding known amounts of the analytes of interest for an analytical method, or a representative subset of those analytes, to an aliquot of sample. The spiked sample is then processed through the same extraction, concentration, cleanup, and analytical procedures as the unspiked samples in an analytical batch.

MS recovery and precision are indications of a laboratory's ability to successfully recover an analyte in the matrix of a specific sample or closely related sample matrices. It is important not to apply MS results for any specific sample to other samples without understanding how the sample matrices are related.

3.3 SURROGATE SPIKE RECOVERIES

Surrogate spikes are used to evaluate accuracy, method performance, and extraction efficiency in each individual sample. Surrogate compounds are compounds not normally found in environmental samples, but which are similar to target analytes in chemical composition and behavior in the analytical process.

3.4 BLANK CONCENTRATIONS

Blank samples are aliquots of analyte free matrix that are used as negative controls to verify that the sample collection, storage, preparation, and analysis system does not produce false positive results.

Laboratory blanks are aliquots of zero air that are processed by the laboratory using exactly the same procedures as the field samples. Laboratory blanks are used to monitor for contamination introduced by the laboratory during sample preparation and analysis. Target analytes should not be found in laboratory blanks.

When target analytes are detected in blanks, analyte concentrations in associated samples greater than the reporting limit (RL) but less than five times the concentration detected in the blank, or ten times the concentration detected in the blank for common laboratory contaminants, will be U qualified as being not detected.

3.5 LABORATORY AND FIELD DUPLICATES

Laboratory and field duplicate analysis verifies acceptable method precision by the laboratory at the time of preparation and analysis and/or sampling precision at the time of collection.

4.0 CHAIN OF CUSTODY AND SAMPLE RECEIPT CONDITION DOCUMENTATION

The samples were received at the laboratory under proper chain of custody, intact, and each Summa canister used in the indoor air investigation was individually certified to be clean and free of VOCs at concentrations equal to or greater than the method reporting limit, with the following exceptions:

- The chain of custody information for samples in SDG 1207474 did not match the entries on the sample tags. The samples labeled RB1-OA1-20120720, RB1-IA1-20120720, RB1-IA2-20120720, RB1-CS1-20120720, RB2-IA1-20120720, RB2-IA2-20120720, RB2-CS1-20120720, RB3-IA1-20120720 and RB3-IA2-20120720 on the chain of custody are labeled as RB1-OA1-20120719, RB1-IA1-20120719, RB1-IA2-20120719, RB1-CS1-20120719, RB2-IA1-20120719, RB2-IA2-20120719, RB2-CS1-20120719, RB3-IA1-20120719, and RB3-IA2-20120719 on the sample tags. The information on the chain of custody was used to process and report the samples.
- Sample RB3-IA2-20120720 (SDG 1207474) was received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.
- The chain of custody information for a sample in SDG 1301413 did not match the entry on the sample tag. The sample labeled RB7-CS1-20120123 on the chain of custody is labeled as RB7-CS1-20130123 on the sample tag. The information on the sample tag was used to process and report the sample.

- The chain of custody information for sample AMI-IA2-20130127 (SDG 1301507) did not match the information on the canister. The can number listed as 33833 on the chain of custody is listed as 33883 on the can. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.

5.0 SPECIFIC DATA QUALITY REVIEW FINDINGS

Results from these samples may be considered usable with the limitations and exceptions described Sections 0 through 0. Summaries of specific qualifiers added to the sample as a result of the data quality review findings are presented in the following table.

Table 2. Qualifiers Added During Data Validation

Sample IDs	Analytes	Concentrations		Qualifiers and Reason Codes	
RB7-IA1-20130123	Toluene	7.6	µg/m^3	J	FD
RB7-IA2-20130123	Toluene	4.9	µg/m^3	J	FD
RB7-IA3-20130123	Toluene	4.9	µg/m^3	J	FD
RB7-CS1-20130123	Toluene	6.4	µg/m^3	J	FD

5.1 VOLATILE ORGANIC COMPOUNDS BY EPA METHOD TO-15

VOC results generated by Air Toxics are usable with the limitations described in Sections 0 through 0.

5.1.1 Holding Times

These samples were analyzed within the EPA-recommended maximum holding time of 30 days from sample collection.

5.1.2 Gas Chromatograph/Mass Spectrometer Instrument Tunes (Tier 3 Validation Only)

The instrument tunes associated with the analysis of the samples in SDGs 1301413 and 1301507 met all QAPP-specified criteria, with the following exception:

- The measured mass/charge (m/z) of the m/z 75 ion exceeded the QAPP-specified ion abundance criteria of 30% to 60% of the m/z 95 ion at 60.68% in SDG 1301507. However, because the exceedance was less than 1% of the QAPP limits and within the limits of 30% to 66% specified in the analytical method itself, it is AMEC's professional opinion that this does not adversely affect data usability and no qualifications are necessary.

5.1.3 Initial Calibration (Tier 3 Validation Only)

The initial calibration associated with the analysis of the samples in SDGs 1301413 and 1301507 met all QAPP-specified criteria.

5.1.4 Initial Calibration Verification (Tier 3 Validation Only)

The initial calibration verification (ICV) associated with the samples in SDGs 1301413 and 1301507 met all QAPP-specified limits.

5.1.5 Calibration Verification (Tier 3 Validation, unless otherwise noted)

Calibration verification standard (CVS) recoveries associated with the analysis of SDGs 1301413 and 1301507 were within the QAPP-specified 70% to 130% limits.

5.1.6 Laboratory Blanks

Target analytes were not detected at concentrations above the RLs in the laboratory blanks associated with these samples.

5.1.7 Laboratory Control Sample Accuracy

LCS and LCS duplicate (LCSD) recoveries were within the QAPP-specified 70% to 130% limits and LCS/LCSD RPDs were less than the QAPP-specified maximum of 25%, with the following exception:

- trans-1,2-dichloroethene (DCE) recovery was high in the LCS (136%) and the LCSD (137%) associated with the analysis of samples AMI-OA1-20130127, AMI-OA2-20130127, AMI-IA1-20130127, and AMI-IA2-20130127. Data usability is not adversely affected by the potentially high analytical bias because trans-1,2-DCE was not detected in the associated samples.

5.1.8 Surrogate Recoveries

All surrogate recoveries were within the QAPP-specified 70% to 130% limits.

5.1.9 Internal Standard Recoveries (Tier 3 Validation Only)

Internal standard recoveries associated with the analysis of SDGs 1301413 and 1301507 were within the QAPP-specified 60% to 140% limits.

5.1.10 Calculation Checks and Analyte Identification (Tier 3 Validation Only)

AMEC reviewed mass spectra and checked analyte concentration calculations for the samples from SDGs 1301413 and 1301507 selected for R9 LIII validation. All detections were correctly identified and all checked concentration calculations were correct.

6.0 FIELD DUPLICATES

Blind field duplicates were collected for samples the following indoor air samples: residential samples RB4-IA1-20120720 (RB4-IA3-20120720), RB6-IA1-20120720 (RB6-IA3-20120720), and RB7-IA1-20130123 (RB7-IA3-20130123); and commercial sample AMI-IA4-20130127 (AMI-IA9-20130127). Analytical precision for target analyte detections in these samples is summarized in the following table.

Table 3. Field Duplicate Detections

Analyte	Average RL		Primary Concentration		Field Duplicate Concentration		RPD	Notes
RB4-IA1-20120720 and duplicate RB4-IA3-20120720								
Toluene	0.13	µg/m3	1.1		1.2		9%	
RB6-IA1-20120720 and duplicate RB6-IA3-20120720								
Toluene	0.12	µg/m^3	1.9		1.9		0%	
RB7-IA1-20130123 and duplicate RB7-IA3-20130123								
Toluene	0.12	µg/m^3	7.6		4.9		43%	J-FD
AMI-IA4-20130127 and duplicate AMI-IA9-20130127								
Toluene	0.14	µg/m^3	6.7		6.8		1%	

Relative percent differences were less than the QAPP-specified maximum of 25%, or the differences between the detected concentrations were less than the appropriate RL, for all field duplicates with the following exception:

- The RPD for toluene was high at 43% between RB7-IA1-20130123 and its duplicate RB7-IA3-20130123, and sample concentrations were greater than 5x the MRL. AMEC J-qualified the detected toluene results in these two samples and the other two samples collected the same day, in the same building, due to imprecision (J-FD).

7.0 SUMMARY AND CONCLUSIONS

AMEC qualified the following QAPP-specified constituents of concern in these samples:

- AMEC J-qualified the toluene results from four samples RB7-IA1-20130123, RB7-IA2-20130123, RB7-IA3-20130123, and RB7-CS-20130123 because the relative percent difference between the parent sample and field duplicate were greater than the QAPP-specified 25% limit (Section 0).

AMEC evaluated a total of 600 data records from field samples during the validation and data quality review. AMEC J-qualified four records (0.6%) as estimated values, and all data reported are usable.

8.0 REFERENCES

AMEC, 2012. AMEC Environment & Infrastructure, Inc., 2012a, Work Plan to Evaluate Potential Vapor Intrusion, Intersil/Siemens Site, Indoor Air Study Area, Cupertino, California, February 12.

EPA, 1999. Method TO-15, Determination of Volatile Organic Compounds in Air Collected in Specially-Prepared Canisters and analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), EPA/625/R-96/010b, January 1999.

EPA, 2001. U.S. Environmental Protection Agency Region 9 Superfund Data Evaluation/Validation Guidance, Version 1, R9QA/006.1, December, 2001.

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